



Influencing factors for the digital transformation in the financial services sector

Oliver Werth · Christoph Schwarzbach · Davinia Rodríguez Cardona · Michael H. Breitner · Johann-Matthias Graf von der Schulenburg

Accepted: 20 November 2020 / Published online: 7 December 2020
© The Author(s) 2020

Abstract Digital transformation affects almost every area in societies and has consequences for incumbent companies. With qualitative research, we explore the influencing factors for digital transformation in the financial services sector. We use a PEST-model and Porter’s Five Forces as the underlying structure for our analysis. Our interviews and findings show that the financial services sector face the same current challenges, but their impact is perceived higher in the banking than in the insurance sector concerning social factors and bargaining power of buyers. The character of the current development is evolutionary rather than disruptive. Almost all incumbents currently focus on modernizing and consolidating their backend-systems. The aim is to enable them for new customer-oriented services. A primary driver for the digital transformation is the threat of a broader market entry by BigTechs. Our research provides a comprehensive overlook about the influencing factors of digital transformation using statements from experts in the field.

O. Werth (✉) · D. Rodríguez Cardona · M. H. Breitner
Information Systems Institute, Leibniz Universität Hannover, Königsworther
Platz 1, 30167 Hannover, Germany
E-Mail: werth@iwi.uni-hannover.de

D. Rodríguez Cardona
E-Mail: rodriguez@iwi.uni-hannover.de

M. H. Breitner
E-Mail: breitner@iwi.uni-hannover.de

C. Schwarzbach · J.-M. Graf von der Schulenburg
Institute for Risk and Insurance, Leibniz Universität Hannover,
Otto-Brenner-Straße 7, 30159 Hannover, Germany

C. Schwarzbach
E-Mail: cms@ivbl.uni-hannover.de

J.-M. Graf von der Schulenburg
E-Mail: jms@ivbl.uni-hannover.de

Keywords Influencing Factors · Digital Transformation · Financial Services Sector · Banks and Insurances · Qualitative Research

Zusammenfassung Digitale Transformation berührt nahezu jeden Bereich der Gesellschaft und hat Auswirkungen für etablierte Unternehmen. Diese Studie untersucht mit qualitativen Forschungsmethoden die Einflussfaktoren der digitalen Transformation im Finanzsektor und nutzt das PEST-Modell und Porters Fünf-Kräfte-Modell zur Strukturierung der Analyse. Die Interviews und Ergebnisse zeigen, dass der Banken- und Versicherungssektor grundsätzlich ähnlichen Problematiken gegenüberstehen. Allerdings wird der Einfluss bezüglich der Herausforderungen durch soziale Faktoren und der Verhandlungsstärke der Nachfrager bei Banken höher wahrgenommen als bei Versicherern. Der Charakter der Entwicklung kann als evolutionär statt als disruptiv bezeichnet werden. Fast alle etablierten Unternehmen fokussieren sich im Moment auf die Modernisierung und Konsolidierung ihrer Backend-Systeme. Das Ziel ist es, die Grundlagen für neue kundenorientierten Dienstleistungen zu legen. Ein wichtiger Treiber für die digitale Transformation ist die Befürchtung eines breiten Markteintritts von BigTechs. Die vorliegende Forschung bietet einen grundlegenden Überblick über die Einflussfaktoren von digitaler Transformation mithilfe von Expertenaussagen der jeweiligen Sektoren.

Schlüsselwörter Einflussfaktoren · Digitale Transformation · Finanzsektor · Banken und Versicherungen · Qualitative Forschung

1 Introduction

Financial services providers¹ must focus on a set of challenges every day in their business activities. For the past years digital transformation and the resulting threats have been focused in theory and practice (e.g., Bohnert et al. 2019). The respective companies have a strong connection to their customers, based on trust and long-term connections, see e.g., Boot (2000) for the banking as well as, Csiszar and Heidrich (2006) for the insurance sector. In addition, the financial market faces radical innovations, because of the rapid improvements in technical possibilities and delivery channels (Boemer and Maxin 2018). New technologies like artificial intelligence, Robo-advisory and big data analytics offer new possibilities for companies to support existing business processes and clients. They improve and create new financial services to better meet changing customer requirements (Keller 2018). On the other hand, digital innovations foster sales of financial services through digital channels, e.g., online-platforms and have several chances and challenges for companies as well as customers. New entrants move into the market. Through new business models, FinTechs, InsurTechs or global Internet giants like Amazon, Google and Facebook, also called BigTechs, threaten incumbent companies (Arner et al. 2016), which react differently to these new entrants.

¹ With “financial services providers”, we mean both, banks and insurances.

Motivated by these statements and an ongoing discussion, we follow the calls of Eling and Lehmann (2018) for more empirical research about the drivers for digital transformation in the insurance sector as well as in the banking sector (Pramanik et al. 2019). Through a qualitative approach, our research objective is to study the current topics, which drive digital transformation in the sector.

15 semi-structured interviews with experts in the financial services sector were conducted to identify relevant topics and factors and serve as the primary data of our investigation. To examine the factors, which can be understood as influences for digital transformation, we make use of the PEST-analysis (Aguilar 1967; Gupta 2013). This allows us to identify external factors or mega-trends from a macro-perspective on the financial sector. We combine the factors from the PEST-analysis with a sector-specific perspective from Porter's Five Forces model (Porter 1980) in order to examine sector-specific issues concerning digital transformation. These two perspectives serve as an up-front theory (Sarker et al. 2013) for our examination and analysis. We use methods, borrowed from Grounded Theory (GT) (Glaser and Strauss 1967), to analyze the interview material. Our examination expands the literature about the drivers for digital transformation with recent qualitative data. We compare the results of both sectors in Germany. To the best of our knowledge, past research investigated the sectors separately (e.g., Eling and Lehmann 2018; OECD 2018; Pramanik et al. 2019; OECD 2020). Practitioners can use our research to compare and discuss the most recent trends and thoughts based on statements from and perspectives of professionals for the respective industry.

The paper is structured as follows: First, we give an overview of relevant literature on digital transformation in general and digital transformation in the financial services sector. In addition, we present our theoretical background, i.e., PEST-analysis and Porter's Five Forces in this section. The third section is dedicated to our methodology and data collection. In the fourth section, we describe the results and findings of our qualitative research. The fifth section contains the discussion of the findings and implications. We complete our research with limitations, future research directions (Sect. 6) and concluding remarks (Sect. 7).

2 Related literature and theoretical background

2.1 Digital transformation in the financial services sector

The information systems (IS) field had traditionally provided the theoretical and analytical frameworks to address the transformational impact of the diffusion, integration and implementation of information technologies (IT) on diverse, complex business ecosystems (Hirschheim and Klein 2012). From the first computer systems to the leading-edge digital technologies such as social, mobile, analytics, cloud and Internet of Things (SMACIT) technologies (Sebastian et al. 2017), the degree and rapidity of technological innovation had set the pace of the digital transformation in services and industrial sectors and framed the scientific discourse on business and IS research (Kutzner et al. 2018). Vial (2019, p. 118) describes digital transformation as “a process where digital technologies create disruptions triggering strategic

responses from organizations that seek to alter their value creation paths while managing the structural changes and organizational barriers that affect the positive and negative outcomes of this process.” In line with this definition, the disruptive effects resulting from digital transformation are the direct consequence of second-order technological disruptions, induced by the aggregated impact of multiple digital innovations on social, economic and political norms (Schuelke-Leech 2018). From a technological perspective, digital innovation can take the form of business or technical process improvements, new digitalized products or service innovations, new digitally-driven business models, and digital business strategies based on new paradigms for value creation (Bharadwaj et al. 2013; Matt et al. 2015; Barrett et al. 2017; Gerster 2017; Karagiannaki et al. 2017; Hess et al. 2019).

Given the critical importance of the effects of digital transformation across organizations, industries and societies, the phenomenon began to take shape as a research area in a diverse set of disciplines in the last decade. In the past, research was conducted in the fields of management (e.g., Henriette et al. 2015), organizational science (e.g., Riasanow et al. 2019) and IS (e.g., Gerster 2017; Reis et al. 2018; Vial 2019).

The financial services sector is mainly composed of banking, asset management and insurance activities, of which the first two are usually offered in a combined manner. Different traditional products provided by banks and insurances have both a complementary as well as a substitutive character (e.g., Liu and Lee 2019). Despite apparent converging effects between banks and insurances, Beltratti and Corvino (2008) emphasize the underlying differences between the two business models, which are primarily related to demography (including e.g., sales channels, regulation and accounting), the liability structure and the scale of operations. These structural differences in turn also shape the relevance and speed of the digital transformation of each of these two types of financial intermediaries within the financial sector. Currently, there is a limited amount of studies that specifically provide a systematic analysis of the influences on the processes and effects of leveraging digital technologies in this highly regulated and conservative sector. One of the few existing integrative studies on this issue consists of a meta-analysis of the literature on digital transformation performed by Czesla (2015). This phenomenon, commonly known as financial technology (FinTech) disruption, is recognized in the scientific literature as the main driver of the last wave of digital transformation in the financial services sector (Schwab and Guibaud 2016; Alt et al. 2018; Gimpel et al. 2018; OECD 2018, 2020). Eickhoff et al. (2017, p. 2) define FinTechs as “companies that operate at the intersection of (i) financial products and services and (ii) IT. Furthermore, they are usually (iii) relatively new companies (often start-ups) with (iv) their own innovative product or service offerings” (Eickhoff et al. 2017, p. 2). For our examination, we define these groundbreaking businesses as FinTech companies in the banking and insurance technology (InsurTech) companies in the insurance sector.

To typify the integration process of analog and digital technologies into the banking sector, Arner et al. (2016) develop a framework of the evolutionary states of technology integration. This framework consists of three stages conceptualized around the idea of FinTechs. During the first two stages of the framework, denominated as FinTech 1.0 (years 1866–1967) and FinTech 2.0 (years 1987–2008), the integration

of analog technologies enabled the development of the legacy core systems and the digital transformation of business processes (Arner et al. 2016). With FinTech 3.0 (years 2008-present), the diffusion of new digital technologies across industries allows the generation, collection, storage, and analysis of vast amounts of unstructured data, which ultimately initiates the present FinTech-driven digital transformation of the banking sector (Alt et al. 2018; Arner et al. 2016). According to Alt et al. (2018), the structural changes related to the FinTech-driven digital transformation can be categorized into external, network and internal levels of transformation. At the external level, Alt et al. (2018) identify a change from offline to online services and business models incorporating non-cash payments. At the network level, the presence of new, highly specialized competitors contributes to lower switching cost and redefined customer loyalty (e.g., customers using more than one bank). On the internal level, the business focus of the banking service providers evolves from becoming manual, process-oriented to automatic, and customer-centric. In the scientific literature, a detailed classification of the empirical elements of the business models, influenced from digital transformation, can be found from different perspectives like customer orientation in the taxonomic studies of Eickhoff et al. (2017), Beinke et al. (2018) and Gimpel et al. (2018).

In comparison to the banking sector, the insurance sector adopts digital technologies at a slower pace, therefore the empirical research on the transformational capabilities of the intersection between InsurTechs is less advanced than on FinTechs with a focus on banking products (Cziesla 2015; Puschmann 2017; Stoeckli et al. 2018). The practical relevance of InsurTechs has begun to increase, following the growing use of their digital services and product offerings (Gulamhuseinwala et al. 2017). To close the gap between research and practice, Stoeckli et al. (2018) develop an empirical taxonomy of the transformational characteristics of InsurTech innovations. By analyzing 208 InsurTech innovations using the insurance value chain as a framing notion, Stoeckli et al. (2018) identify 52 characteristics and 14 “sources of competitive advantage” or “transformational capabilities” related to data-driven infrastructure operations, digital services provisioning, insurance service development and customer network promotion. Consistent with Schmidt (2018, p. 7), the major modifying capability of the digital transformation in the insurance sector is “the ability to develop new and more customer-centric products and solutions and at the same time reduce costs”. The whole spectrum of digital technologies is expected to contribute to the digital transformation of the insurance sector. Keller (2018) categorizes big data analytics, artificial intelligence, and the Internet of Things as the most impactful technologies for generating a fundamental transformation in the design of customer-centric insurance products (e.g., on-demand and usage-based insurance).

2.2 PEST-analysis and Porter’s Five Forces

Technical development and digital transformation represent a strong external influence on the macro-level affecting the companies. The financial services sector is highly regulated and thus, in many respects, dependent on political decisions and influences. Other external factors are economic and social developments. All these trends, in turn, influence each other. For example, the current economic situation of

low interest rates is leading to cost pressures, which are intended to be addressed by an increasing level of digital transformation and automation. In 1967, Francis Aguilar laid the foundation for the environmental analysis by forming four categories for influencing factors on the corporate environment (economic, technical, political and social) and summarizing these into the acronym ETPS (Aguilar 1967). Currently the acronym is more often switched to PEST. Some publications also include ecological and legal considerations, leading to the acronym PESTEL. These two additional perspectives are commonly integrated into the original four factors.

For a sector-internal analysis at the meso-level, the analysis framework of the Five Forces model according to Porter (Porter 1980) represents the central part of our theoretical framework. It is a proven reference framework for the analysis of an entire sector as well as an individual company (Porter 1991). The Five Forces model can also be interpreted as the external factors (“Opportunities and Threats”) in a SWOT analysis, whereby the internal factors (“Strengths and Weaknesses”) are omitted (Rugman and Verbeke 2000). The five influences according to Porter (1980) are “bargaining power of suppliers”², “bargaining power of buyers”, “threat of new entrants”, “threat of substitute products”, and “rivalry among existing companies”.

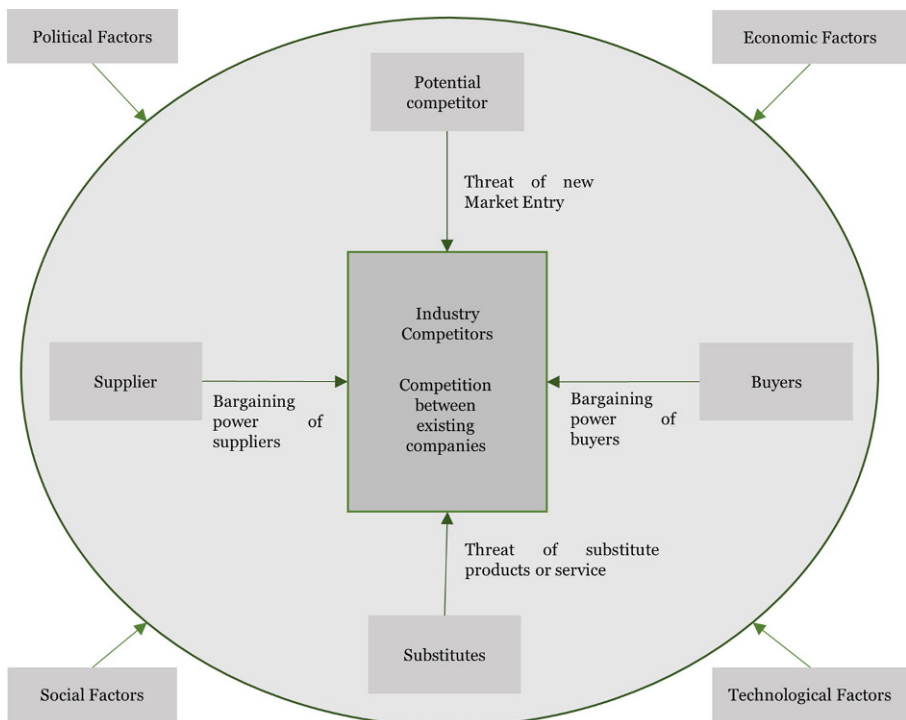


Fig. 1 Combination of Porter’s Five Forces (Meso-Level or Industry-Internal Influences) and PEST-Analysis (Macro-Level or Industry-External Influences)

² In this context relatively broadly understood as a cooperation partner, e.g., for sales or as a co-supplier of a bundled product.

This model allows conclusions about the business models of the financial services sector. The analyses are usually static snapshots or cross-sectional observations. The much more complex longitudinal or dynamic perspective is neglected in the original model (Porter 1991).

To integrate the macro- and meso-levels, a PEST-analysis as described above, is added to the model. Following Grundy (2006), we use the framework shown in Fig. 1 for a structured analysis of the financial services sector. The micro-level would focus on impacts within the companies. Digital transformation, for example, implies changes on the level of processes, products and employees. This is not the focus of our research and neglected in our study. Fig. 1 shows the theoretical framework, the so-called up-front theory (Sarker et al. 2013), for our analysis.

3 Research methodology and data collection

To examine and analyze important aspects of digital transformation in the financial services sector, we make use of a qualitative approach. In accordance to Dey (1993, p. 63) and to be “open-minded but not with an empty head” towards the topic of digital transformation, our initial examination of the relevant literature and the theoretical foundation serves as a knowledge background for the interview situations. Qualitative research delivers the opportunity to generate new insights by direct interaction with interviewees, which were encouraged to articulate their own experiences with digital transformation in the financial services sector (Gioia et al. 2013). Potential interview participants, e.g., consultants who are specialized in the banking and/or insurance sector were invited via e-mail, personal contact or telephone by the academic and practice network of the researcher’s institutions. Our sampling for interview partners intended to receive an overall opinion and impression about digital transformation in the financial services sector. We recruited participants for our examination outside of banks and insurances to receive a diverse and independent view on the phenomenon and to strengthen the exploratory nature of our research. In addition, we looked for participants that have a broad industry expertise and an in-depth view on internal business processes prevalent in banks or insurance companies. Ideally, they have a long working experience within the financial sector and are currently involved in projects connected to digital transformation. Methodologically, this was valuable for the contextualization of the in-depth case studies and the transformative experiences within banks and insurance companies. These corresponding case-study examinations are, however, out of the scope of this paper.

We were able to carry out ten ($n=10$) semi-structured interviews with business experts. In addition, we conducted two focus group-interviews with two ($n=2$), respectively three ($n=3$) participants. We closed our collection of new interview material, since we achieved theoretical saturation of the results. Theoretical saturation is the point, at which no new topics or no new insights are generated (Strauss and Corbin 1990). After these 15 interviews, we perceived that with additional interviews, we will not derive new concepts, ideas, or topics about the influences of digital transformation and therefore closed our data collection phase. All interviews ($n=15$) were performed personally by one of the authors between April 2018 and

June 2019. The number and spread of data collection points, i.e., the collection of interview data is an important issue for qualitative studies (Bruce 2007). Possible new external influences, e.g., new regulations that can influence the data collection and the results, must therefore be mentioned and discussed. In this particular case, apart from new regulations there were no major external influences on the market. In 2018, two important legal changes took effect. The first of these is the Payment Services Directive 2 (PSD2) introduced in January 2018 and the second is the General Data Protection Regulation (GDPR) introduced in May 2018, but announced by the European Union in 2016. Our interviewees were familiar with these regulations, and thereby their effect is accounted for in our analysis.

To ensure the reliability of our approach (Silverman 2016), we used two different interview guidelines for our semi-structured approach. With Table 4 in the appendix, we provide an exemplary interview guideline for experts in the banking sector. We created them in German for our interview situation with interview partners. One each for experts in the banking and one for experts in the insurance sector. The interviews started with background information regarding the research project and the researchers. Keeping in mind our up-front theory described in Sect. 2.2., we included the aspects of Porter's Five Forces and PEST-Analysis in our interview guideline, and in addition, we transformed these aspects into questions with regard to digital transformation in the financial services sector. In line with this, we asked, for example, general questions concerning the economic situation ("economic factors" or "political factors") and influences for digital transformation of the financial services sector, i.e., banking and insurances accordingly. After these starting questions, respondents were invited to talk about their impressions and opinions about changes of the value chain and business models as well as technological and organizational changes ("social and technological Factors") related to the influence of the digital transformation. Another question block dealt with deviations in their tasks and job situations. Concluding open questions were asked about the ongoing changes in the financial services sector, and respondents were asked to illustrate, based on their professional experience, their perspectives on the future of banks and insurances.

The interviews lasted between approximately 60 to 120 min. All interviews were conducted in German, recorded and transcribed afterwards. We did not send out the interview guidelines in advance, but gave some short indication of our research objective in the letters inviting prospective interviewees to participate in our study. The interview transcripts, served as primary data for our study. We also read white papers and reports of the interviewee's businesses as preliminary secondary literature for the interview situations and analysis afterwards. Table 1 contains information regarding the interview participants.

As the underlying philosophical assumption for the analysis of our interview transcripts, we capture the interpretivism perspective (Klein and Myers 1999). Interpretive studies are generally interested in an understanding of a phenomenon "through the meanings that people assign to them" (Avison and Myers 2005, p. 243). As our study intends to examine on how digital transformation influenced in the financial services sector, we are interested in the opinions of the interview partners and their perspective on this phenomenon. We analyzed our interviews with

Table 1 Interview Experts and Descriptions

Interview	Expert	Company/Institution	Sector	Profile of Interviewee
1	1A	Consulting A	Banking	1A has been consultant since 26 years for banks as well as expert for digital services and team lead of around 200 employees
2	2A	Consulting B	Banking/Insurance	2A has been consultant since 12 years and has previous expertise as trained insurance salesperson. The interviewee is responsible for consulting of banks and insurance companies as well as labor unions and employers associations in the financial services sector
3	3A	Consulting C	Insurance	3A is team lead of the insurance sector at consulting company C. The person is consultant for insurance companies since 18 years
4	4A	Consulting D	Insurance	4A has a PhD in economics with focus on insurance economics. The interviewee is senior manager at consulting company D and has 22 years of expertise with digital transformation in the insurance sector
5	5A	Consulting A	Insurance	5A studied Mathematics and Finance, and has worked within many digital transformation projects in banks and insurance companies. Since 2014 is consultant for insurance companies at Consulting A
6	6A	Insurance Practitioners Journal A	Insurance	6A is journalist for the insurance sector and industry expert since 25 years
7	7A	Employers Association A	Banking	7A main responsibilities have a focus on tariff politics for employers' association A. The expert is representative for banks in tariff negotiations for 11 years
8	8A	Employers Association B	Banking	8A studied economics and legal studies. The interviewee is the lead of employers association B and is interest representative of banks since 5 years
9	9A	Employers Association C	Insurance	9a is responsible for digitalization at employers' association C. The interview partner studied insurance economics and is since 10 years expert for digital transformation projects in the insurance sector
	9B	Employers Association C	Insurance	9B studied economics and earned a PhD in economics. Since 8 years, 9B is leading representative at employers association C for insurance companies
10	10A	Labor Union A	Banking	10A is workers' representative at labor union A since 2 years. The interviewee is responsible for digital transformation projects and corresponding conflicts within the banking sector
11	11A	Labor Union A	Banking	11A has the area lead for financial services companies at labor union A. Since 28 years, 11A is representative at labor union A for banks
	11B	Labor Union A	Banking	11B is IT-consultant for labor union A for 2 years. The interview partner studied economics and was the former CEO of an IT consulting company for the banking sector
	11C	Labor Union A	Banking	11C has 22 years of experience in banking. Since 2 years 11C work for labor union A and is specialized in IT solutions and contact person for banks and work councils

Table 1 (Continued)

Inter-view	Expert	Company/ Institution	Sector	Profile of Interviewee
12	12A	Labor Union A	Insurance	12A is the coordination of tariff politics in the insurance sector for labor union A since 3 years. The interview partner is the contact for several work councils in the insurance sector

methods, borrowed from GT (Glaser and Strauss 1967). GT can be used as a coding method or as a method for theory generation (Charmaz 2006). The elaboration of GT and the corresponding methods is represented here in the way that coding methods were applied to fulfil our research objective. All transcripts of the expert interviews were analyzed and coded with MAXQDA Analytics Pro 2018 (Version 18.2.0). The coding procedure, in general, is a process that “gets the analyst off the empirical level by fracturing the data, then conceptually grouping it into codes that then become the theory which explains what is happening with the data” (Glaser 1978, p. 55).

First, we used open coding to identify first initial labels or patterns inside the data (Glaser 1978). Initial labels were for example, “overall market information” about the banking or insurance sector as well as “blockchain” as a possible new technology for businesses. We considered this procedure as complete as we went through all the available data. Second, we used selective coding, which is described as a procedure to capture only those concepts, which are related to the previous initial labels (Strauss 1987). For example, our initial label “blockchain” as a new technology in the banking and insurance sector was further coded to the influencing concepts which are, e.g., “technological factors”. An overview of anchor examples for each influencing concept can be found in the appendix. Our coding process was accompanied by constant comparisons, while we link our data with the categories to ensure the best fit with the analysis (Wiesche et al. 2017).

4 Influencing factors for the digital transformation

Our theoretical background provides the structure for the following section. We present our results in line with the PEST-analysis as well as Porter’s Five Forces model.

Political factors Political factors, e.g., regulatory issues, in the financial services sector were described as having significant influence and being connected to a heavy workload in the operational routines, which notably increased after the financial crisis. Correct implementation and execution of regulatory issues, described by the interviewed experts, is especially a problem for small banks and insurances because of the relatively high costs for these small entities. These can initially emerge if new technological systems as well as more specialized knowledge employees are necessary to implement the rules, as is reflected in the following statement of one

of the interviewed representatives of the employers' association (10A) with regard to regulatory effects on work changes and operational routines:

I: “[...] in former times, the emphasis was on sales orientation [...]. Since the focus was on sales, the desirable employee competences revolved mostly around having ‘the sales gene’ and social communication skills [...] has there been any reappraisal of these criteria, perhaps in the present?”

10A: “[...] there are new regulatory requirements whose effects are naturally in the meantime in the everyday life of the financial advisors clearly noticeable, so to speak. It begins with the whole documentation obligation, where even telephone consultations should be documented and suchlike [...] And not everyone can do it, since a lot of practical knowledge and regulatory background knowledge is required to do so, for example, what is needed to be considered in the regulations? And I think that if the regulators find out that the bankers have made too many mistakes in their day-to-day advice, then banks, naturally, would have a problem.”

New regulatory issues foster digital transformation in the financial services sector because new technological systems are unavoidable. Employee's representatives, e.g., 7A, articulate that the financial institutions, i.e. banks, must fulfill regulatory issues. Consequently, employees must be able to fulfil these requirements and work their operational routines become more complex. Taken this statement further, labor union representatives, e.g., 10A, also further acknowledged that employees are concerned about the changes of their tasks. In addition, employees are afraid of not being able to fulfil their job, because as a result of these new complexity by new regulatory issues in the financial sector.

Political factors (regulatory issues) have, besides from mentioned negative aspects, positive influences for the incumbents, like a barrier for new market entrants. Our interview material indicates that banks and insurances face different regulatory pressures (banks at the time of the interviews more than insurances) and with a time lag, banks were regulated faster than insurances in the last years. Therefore, they must consider higher pressure of regulations in the future. Concerning digital transformation, it can be stated that political factors are a relevant driver for digital transformation in banks and insurances.

Economic factors One of the essential features of this market in recent years is the continuing low interest rate environment, which has a significant impact on the overall sector. Concerning banks, our interviews show a clearly observable trend of consolidation in the banking sector, resulting in the closing of branch offices and, in the end, layoffs. On the other hand, the experts point out that the current number of competitors in the German banking sector is an advantage in comparison to other countries due to the lower risk of a collapse of the financial system. In line with banks, insurances also face high pressure towards digital transformation because of the above-mentioned low interest rates, changing customer demands and the requirements of new product characteristics, which are designed to meet the former two. This statement is especially true for the important classes of car

and life insurance, which in particular exhibit low profitability. In life insurance, consolidation is also observable, most prominently in the form of external run-offs, as an expert (9A) from an employers association acknowledged:

I: “How do you see the current economic situation in the industry?”

9A: “[...] the situation around the low interest rate phase is an extraordinary burden for the German insurance industry. We are seeing sales of life insurance portfolios because the business is simply no longer profitable at this point. Concerning the run-off companies. That is not ‘a devil’s work’ per se. [...] Those companies are ultimately specialized platforms that are licensed and subjected to supervision. Consequently, this aspect is represented by the press and consumer protection agencies more negatively, than the reality is [...].”

Interviewees (especially consultants) e.g., 3A, state that the insurance market is, despite the regulatory and competitive pressure, still in a rather good economic condition. Contrary to this opinion, labor union representatives, e.g., 12A articulated a more pessimistic view on the economic situation, concluding that the economic condition of the insurance sector will lead to job reduction. The banking sector is less fortunate: Companies have to steer their businesses away from traditional products (with a focus on interest incomes) to new solutions and products for the customer (less dependent on economic factors). In result, economic factors, namely the ongoing low interest rates, profoundly influence digital transformation in both sectors.

Social factors Social factors, describing changes of socio-cultural aspects, receive ongoing attention by financial services companies. Because of changing consumer behavior, companies face challenges from the demand side and, are forced to digital transformation, e.g., adjust their customer interfaces. People (especially the so-called Generation “Z”) increasingly inform themselves and compare financial products online. This new technological approach has to be included in the value chain of the companies. Especially sales, and here the intermediaries are most affected. This is more pronounced for banking services which are used more frequently making an easy-to-use online solution more important.

These changes in the behavior of the customers do not necessarily mean that the clients want all the products to be offered only online. For example, old age provision or construction financing are rather complex long-term products, which (currently still) tend to require an individual and personal advice. The possibility, to have personal relationships with the customer, was perceived as a positive asset for the insurance sector compared to BigTech companies, as an expert (9A) mentioned:

I: “What strategies do you see for companies with regard to start-ups on the one hand and perhaps threatened market entries by large technology providers on the other?”

9A: “[...] So at the point where our established insurers cleverly position themselves where they are good, namely in the personal relationship, that there is

a person and a person is also there for me and is basically able to offer discounts across all products, this is definitely a way to, in my opinion, to survive.”

In result, banks at present face more influences by social factors to add new digital channels to their business models than insurances, always without abolishing the traditional routes of communication. Connected to possible changes in working hours and behaviors, an interview partner (expert 10A) marked the influence of social factors for the banking sector:

I: “So in terms of working hours, it is already part of the work profile that the advisors can also be available on weekends for consultation via Skype or for any request the customers may have?”

10A: “Actually, I think the entry challenge is that people don’t come to the stores anymore, but do it somehow via homepage or app solutions. And I mean that’s the classic case, so to speak. And from my point of view, that’s why everything moves.”

In contrast, other labor union representatives, e.g., 11C, acknowledged that changes of customer demands and behaviors are connected to changes to work situation for employees, e.g., through a shift in working hours.

To sum up, social factors are a strong influence on digital transformation in banks and insurances, but even more in the banking than in the insurance sector. This difference lies mainly in the more frequent utilization of the relatively less complex products, and their ability to be easier sold and attended through online channels.

Technological factors New technologies can also open up possibilities for companies and foster digital transformation. Our interviewees mentioned blockchain, cognitive systems, artificial intelligence/big data analytics and visualization, robo-advisory, as well as robotic process automation as relevant for the financial services sector. While emphasizing positive aspects, like possible cost savings or profitable ways of offering products, negative elements like the lack of trust and the resulting uncertainty were also mentioned. Existing companies often start to experiment with such technologies, but rarely include them in their daily businesses and routines as an expert in the insurance sector (6A) mentioned:

I: “Much as been said about front-end or customer interfaces, for example. However, have you seen any currently new development implemented by financial companies in direction of digitalization that is great? Well, what stands out is that much is being done in this regard, some good, some bad.”

6A: “Yes, there are some ‘hype words’. And I think they have been already substantially brought into existence. Now, new developments are still happening, but the development outcomes are still superficial. Blockchain is a fascinating development. But so far, Blockchain has only been running in the test area. That is where it works well. Of course, only in quite basic test areas.”

Comparing banks and insurances, banks are currently faster in introducing such new technological possibilities, while insurances tend to observe these new potentials first. However, they currently build up knowledge and experiences with such technologies, as a banking expert (1A) marked:

I: "A huge topic, [...] is the topic of blockchain. [...] What potential do you see in blockchain technology for the banks you advise?"

1A: "There are many, many cooperation's. From global banks, who ultimately consider what the use cases could be for us. Where could we really use this technology? [...] A bank once said, we have now established a promissory note platform on the basis of blockchain, right here."

Faster introductions might be because banking services, e.g. payment, are more challenged and already offered by new technology-driven market participants whose solutions will likely change the customer expectations. This especially increases the pressure for banks to better integrate new technological options, while companies from both sectors are at present often working on modernizing their core systems. Outdated digital infrastructures is a major issue and often regarded as a restriction for further development.

Bargaining power of suppliers The suppliers are difficult to define in this context, because of the very few necessary pre-products for any financial service. Banks and insurances are increasingly cooperating to offer co-products/annex-products to reach more customers and enhance customer loyalty. Also, cooperation's with price comparators, most often mentioned Check24, are feasible, as an employer's representative (7A) from the banking sector mentioned:

I: "Earlier you mentioned that, you perceive on many companies and on chief executives a high degree of uncertainty with regard to how their business model will look like in the future. Is that really the basic trend? or is there a new strategic vision for banks, which can enable them to continue with their business models?"

7A: "So at [Bank name] or a direct bank, if you have an account there, you enter everything by yourself. Nobody at the bank undertakes this task. So, you do it online on your computer. And then at some point a credit check is done and that's it. [...] And that is where customer loyalty declines. So, to get back to the point. This leads us to comparators such as Check24. The banks have to offer more than just the classic banking business so far. Because if [Bank] want to keep a customer, as a normal car consumer who needs financing for some consumer goods from time to time and maybe builds a house in his life, then [Bank] have to come up with something new."

An outdated digital infrastructure interferes with these intentions. The bargaining power of suppliers is a driver for digital transformation because an outdated digital infrastructure will not meet their required standard, e.g., to send new customer contacts to incumbents through digital processes. In this overall context, the goal to

establish ecosystems is mentioned by the interviewees. Cooperation's with BigTechs like Amazon, Apple, Facebook, or Google (Alphabet) are possible, while their likely market entry strategy is not yet apparent. BigTechs are discussed in more detail in the subsection "Threat of New Entrants".

Bargaining power of buyers Strongly connected to social factors as part of the PEST-analysis, the bargaining power of buyers plays a crucial role for financial services companies and their digital transformation projects. Cooperation's are arranged with other business sector to address buyer's wishes more conveniently. An expert (9B) of the insurance sector explained this cooperation with a smart phone and a connected insurance product:

I: "At the beginning we also talked briefly about the InsurLabs in Germany. What strategies do you think the companies have for dealing with start-ups on the one hand and perhaps the threat of market entry by large technology providers on the other?"

9B: "[...] there are many new products where you can have annexed products. So if I buy a smartphone and it breaks down. [...] For the next two years or a year, if something happened with it, you get a new smartphone. There's an insurance behind it, [...] often a white-labeled insurance, which is booked together with the purchase of the smartphone."

(Potential) buyers are easily to fulfil their financial needs and product demands online, e.g., mostly better than ever-through services by new tech companies. Mainly banks face the challenge to rethink their great number of branch offices or operational routines and workflows, because of high operating costs and low interest rates. In contrast, insurances mainly mitigate this decision to independent intermediaries.

Threat of new entrants Keeping an eye on threats of new entrants into the financial services market, Fin- and InsurTechs are often referenced. Established companies negotiate cooperation's with FinTechs and InsurTechs to better meet customers' requirements. While we asked about possible innovative projects of the incumbents, an expert (6A) in the insurance sector mentioned the alternative to copy the solutions:

I: "Well, we started off by talking about FinTechs and start-ups and, the whole digitalization environment. Have you seen any business model or any company, [...] that is particularly innovative?"

6A: "So, if you had asked me two years ago, I would have said: Wow, there's a whole lot. In the meantime, my enthusiasm has cooled off a bit. [...] If you look at the innovative ones, the new ones, the start-ups. After all, they are already driving it from the innovations. [...] The established ones could do that too. So they could look at what these InsurTechs were doing? What kind of ideas do they have? And then they copied it with their money and their market power."

Interviewees describe these cooperation's as more established in the banking than the insurance sector. This is comparable to the behavior towards adopting

new technologies, as mentioned above. Besides cooperation, other strategies involve ignoring these new entrants, copying their products and technologies as mentioned before by expert 6A, or acquiring and integrating them into one's own business. In result, the threat of new entrants from Fin- and InsurTechs is described as rather low. Still, it serves as a massive influence on digital transformation of the financial services sector, e.g., resulting in the consolidation of old (technological) processes of the incumbents, as expert (8A) acknowledged:

I: "Yes, [...] but from your point of view, as a representative of an association, where is the real business for your bank? [...] What are they actually doing? So what is their approach now?"

8A: "So I think the main difference is that new competitors look at the process from the customer's point of view, and then derive the needs within their company from that. And thereby organize a smooth process for themselves. The established suppliers and I think this applies to all of them, to a certain extent, have already freed themselves from this, others are still more in line with their old structures, their old processes, their old process chains. They find it extremely difficult and tend to come from their past."

Connected to the above-mentioned statement, labor union representatives for the banking sector, e.g., 10A and 11A, marked the issue that a restructuring of old processes is connected to (the fear of) job rotation and job losses. Some employees worked several years in their position, have the same tasks, and must perform new tasks and responsibilities that can overburden them. The BigTechs, as mentioned earlier, pose another threat. They have the financial and technological means as well as the regular customer contact to add financial services to their product portfolio successfully. They can offer traditional financial products online, especially in connection with other services, they already provide. Examples for this are payment infrastructure and small equipment insurances, which are classical offerings of financial service companies. These new players likely will have a disruptive influence on the market and its current participants, forcing the incumbents to rethink their business strategies. These entrants are, like Fin- and InsurTechs, a driver for digital transformation. Much of the current efforts, primarily by some early adopters are focused on a transformation towards a digital business model to withstand or even provoke a postponement of the market entrance of BigTechs, who have multiple development options available to themselves. Smaller market participants try to follow this lead.

Threat of substitute products Substitute products currently play an under-developed role for financial service companies and their digital transformation. Most FinTechs and InsurTechs focus on business models essentially that are very similar to traditional companies, rendering them competitors rather than substitutes. However, a smaller group of start-ups intends to implement possibly disruptive solutions, mostly based on technological innovations. So admittedly, new market participants offer alternatives for parts of the value chain, especially with a focus on improving the customer interface (e.g., payments and sales). Nevertheless, and with some still

negligible exceptions, they do not interfere with the core competencies and services of the incumbents. Technology-wise the blockchain technology can serve as a basis for various financial services and business models. Anyhow, it was described as not ready for the mass-markets yet. This is the result of the indefinite nature of blockchain, e.g., as an instrument to store values like banknotes (expert 1A) and the acceptance of smart contracts:

I: “What potential do you see in blockchain technology for the banks you advise? In other words, the established players?”

1A: “Because I think there is an opinion that the blockchain will change the world as the Internet did 20 years ago. [...] However, it is not going to happen in the next five years. I do not think it will. Because there are just very, very many issues. [...] There are fraud factors, the Bitcoins, the value jumps up, jumps down. I cannot say that it is going to be a currency now. Because a means of payment, like the Euro note, also has a value-storing function.”

Above all, it remains questionable that blockchain technology can fulfil regulatory standards. With respect to insurances, peer-to-peer business models were mentioned as not ready for the mass-market soon. Overall, the influence of substitute products can currently be described as low for the digital transformation in the financial services sector.

Rivalry among existing competitors Interviewees respond that financial companies closely observe the market to adopt competitors’ products. This points towards high competition among the incumbents. A few companies were repeatedly mentioned as benchmark setters for the respective sector relating to digital transformation projects and topics. The early adoption of products and technical solutions usually provides only a short-lived advantage since competitors can rather quickly adopt most innovations. This is accelerated by increased market transparency and simpler cooperation in the digital age. Property and casualty insurance was mentioned by a consultant (expert 5A) from the insurance sector as an example of increased market transparency:

I: “There is another question for me, in connection with the why of it all. You have said, somehow the systems innovations are primarily, back office or interfaces that are not yet available and so, first a robot is implemented to partially fix up or automate a process without optimizing it. What is the goal of the whole thing?”

5A: “So as soon as you are on the road in the direct market, you are exposed to the pressure of price comparisons, where you then have 100 providers, for example in car insurance.”

5 Discussion and recommendations

Taking a holistic view on the interviews, we found that the influence on digital transformation in the financial services sector was perceived higher in the banking than in the insurance sector concerning social factors and bargaining power of buyers. This is inherent in the respective products. In general, customers expect better digital service from their suppliers. Since, banks in comparison to insurances have more easily standardized and manageable products, a more frequent self-service contact with the customers is possible. For this reason, the customers have a marked influence on digital transformation for banks (e.g., OECD 2020). Insurance products, in contrast, usually require more explications, lowering the influencing effect. Additionally, this higher pressure is reflected in the faster closure of branch offices in the banking sector. This is facilitated by the fact that the companies usually own their distribution network. The social influence is lower in the insurance sector and more slowly adopted by their frequently decentralized and independent sales organization. This result is consistent with other researchers (e.g., Puschmann 2017; Stoeckli et al. 2018).

Our results suggest that currently the influence of new technological factors (e.g., artificial intelligence, (big) data analytics and visualization), on the digital transformation of the business models (macro-level) is still rather low. This is an opposed finding to past research (e.g., Keller 2018; OECD 2018). Managers should prepare their IT-environment to be able to integrate or connect to such technologies in the future. In the process, incumbents should become more flexible to meet new customer requirements and be able to react to new products on the market. This customer-centricity means a constant examination and inclusion of buyer's opinions and demands for financial services by incumbents. This is especially important since one of the main influencing factors identified through our interviews is the threat of market entry by BigTechs. In line with this statement, we found that cooperation's with BigTechs are more established in the banking than the insurance sector. This is comparable to the behavior towards adopting new technologies, as mentioned in the section before. The described influences are long-term megatrends, which should always be in the focus of the management and will gain even more importance in the future.

The other examined factors (see Fig. 1) are also crucial for the companies. Still, they are perceived to have a comparatively lower influence on the phenomenon of digital transformation in the financial services sector. Furthermore, it can be concluded from the combined expert opinions, that the influences and challenges are very similar for banks and insurances. In result, responsible managers can identify, observe and discuss recent developments and trends across both sectors.

As described in connection to some factors, e.g. social factors, the interview material suggest a transition of tasks and responsibilities of the employees. They change due to the digital transformation and new technological possibilities at the workplaces, e.g., because of online-platforms or new systems. Consequently, this leads to changed requirements for the employees. They, in turn, might be resisting, because they worry about losing their jobs through technological substitutes or about

being overwhelmed by expectations to complying with new and excessive tasks, as expert (3A) from the insurances sector mentioned:

I: “Where, if there are any, are located the central points of conflict? Are they related to the introduction of new technological systems or, are there already any conflicts at the level of collective bargaining policy and company level?”

3A: “[...] The [central points of conflict] are driven for two reasons. Fear of job loss because [employees] can rationalize away their jobs on their minds. Also, the willingness to do something different, what do [employees] get from it? [...] For me, these are the main potential conflicts I have.”

Poor communication and commitment of the management to projects, can lead to resistance of the workers and, in result, negatively influence the companies culture (Rodgers et al. 1993). Therefore, management in the financial services sector should be aware of the influences on and of digital transformation with regards to tasks and processes as well as employees themselves.

6 Limitations and future research directions

Our research is limited by interviewees being German professionals, only. Our arguments and results are suitable for the German and, partially, for the European market. Generalizations of qualitative research is a major concern in an IS and IT context (Sarker et al. 2013). Future research could conduct interviews in other countries and compare those results in a cross-national and cross-cultural context on a national or organizational level. Another future research opportunity is a comparison with other business sectors with high regulative pressures, e.g., the pharmaceutical industry, see Holburn and Vanden Bergh (2008). This leads to further insights into the occurrences of and influences on digital transformation across countries and business sectors, which, in result, lead to more specific recommendations for practitioners.

Because of the time-inflexibility of our interview material, we present a snapshot of the influences on digital transformation in the financial services sector. To minimize this limitation, we conducted our interviews from April 2018 to June 2019. Nevertheless, a vital and dynamic topic like digital transformation asks for continuous observation. Further qualitative research, can be performed at a different period and thus derive longitudinal outcomes. This would be even more interesting if the experts from the present study would be interviewed again, since this can give a good indication about the (perceived) advances of and influences on the financial sector. This would help academics and practitioners to understand the dynamic phenomenon of digital transformation better.

Another limitation is that we interviewed experts in their field but outside the companies and not stakeholders from within banks and insurances. Our interview material additionally suggests influences on digital transformation also from an individual or personal level. The tasks of workers in the financial services sector will change due to new technological possibilities at the workplaces, leading to different requirements for the employees. Future research can incorporate these perspectives

to receive a holistic overview of the opinions and statements from a business perspective, which represents the micro-level to our theoretical framework. Real-life case studies of financial service providers can give insights into concrete digitization projects and lead to best-practice principles for a successful implementation of such projects, see Yin (2017) for research guidelines. Follow-up case study research and researchers can compare their findings to suggestions from the academic literature, e.g., the findings of Chanas et al. (2019).

7 Conclusion

Digitization and digital transformation receive an increasing interest in almost every area of life, especially in the financial services sector. With our qualitative approach, we asked 15 experts in the banking and insurance field about their opinions on the occurrence of digital transformation in the financial services sector. Lead by our research objective, we studied the current challenges, which drive and influence digital transformation in the two sectors. Motivated by calls for more empirical research in the financial services sector, our research combined both perspectives, and provided a comparison and possible evolutions with a focus on the German market.

Our research indicates that the banking and insurance sector face the same challenges which are partly perceived differently. Influences of social factors and bargaining power of buyers for digital transformation are described as higher in the banking than in the insurance sector. The experts articulate no disruptive but rather evolutionary developments. In order to facilitate customer-oriented services and be more capable to withstand rising competitive pressure in the future, many incumbent companies are currently modernizing their back-end systems.

Acknowledgments The authors would like to thank the interviewees for their participation in this study and the two anonymous reviewers for their valuable comments.

Funding This research was partly funded by the Hans-Böckler-Foundation, Düsseldorf, Germany under the project number 2017-442-1.

Funding Open Access funding enabled and organized by Projekt DEAL.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Appendix

Table 2 Influencing Concepts and Related Anchor Examples

Model	Influencing Concepts	Anchor Example (Translated from German)
PEST-Analysis	Political Factors	<i>“So the regulation requirement, which is certainly expensive to implement, has an impact on administrative costs. About eight or five years ago, how long ago, the Federal Government began to introduce the legal follow-up estimates according to a standard cost model. There was also, if I still remember it, a measurement of the entire body of legislation with regard to information obligations, fulfilment obligations from the laws.” (Expert 9A)</i>
	Economic Factors	<i>“I think that an important reason is why [...] banks, i.e. traditional banks, are highly endangered, there are several reasons for this. There are competitive reasons for this. Because, of course, new providers come onto the market who have nothing to do with the traditional banking business. [...] So there are the big IT and Internet giants. But there are also smaller, agile companies that have nothing to do with traditional banking. I see this as a major challenge that will be more to the detriment of banks than in the traditional insurance sector.” (Expert 11B)</i>
	Social Factors	<i>“And on the other hand, customer needs are also changing. So I say, the youth, they are much more open anyway. In the old days, when you were young, you practically got a savings account like that, right there. Then you have an account like that, and then it’s often at a bank. Nowadays it’s different. In other words, young people are actually much, much more flexible when it comes to thinking.” (Expert 1A)</i>
	Technological Factors	<i>“At the moment there is probably still happening, we are still everything on the surface. Blockchain is a fascinating story. So far it only runs in the test area. There it works. But of course in the very rudimentary test area. If you think about it further and if it really is the case that most complex things can be exchanged data- and legally secure in lightning speed over the whole world, I mean, then you don’t only have the private customer area, which is affected by it. Maybe even less, because that’s what they get with today’s technology. Then they will have the whole complex industrial business, commercial business, also reinsurance business.” (Expert 6A)</i>

Table 3 Influencing Concepts and Related Anchor Examples

Model	Influencing Concepts	Anchor Example (Translated from German)
Porter's Five Forces	Bargaining Power of Suppliers	<i>"And of course the companies are also very involved, where they simply say: There are many new products where you have annex products. So if I buy an iPhone or a smartphone and it breaks. What, I think!. Now I just heard an advertisement like that again. For the next two years or a year you get that thing, if there's anything there, it's completely added. There's an insurance behind it, [...] but some white label, which is then booked with it." (Expert 9B)</i>
	Threat of New Entrants	<i>"And I can see that there are different strategies. They are also common knowledge. Actually, you already know them. From, I say, ignorance. We ignore them. We are established. We don't have to. Let's take a look at what the FinTechs and the/, or the new competitors are doing. Otherwise we ignore them. And then there are two more strategies called integration. In other words, start-ups or other FinTechs are brought into the group or set up themselves. So this is from an innovation perspective. The fact that small dinghies are being created next to the large tanker, which will then be used to test new innovations, should perhaps also be piloted for the company. Sometimes also for the big tanker. But sometimes also independently of the large tanker for new market segments. And the other strategy is to cooperate." (Expert 11B)</i>
	Threat of Substitute Products	<i>"Because I think there is an opinion that the blockchain will change the world, like the Internet 20 years ago. I think there's probably a lot to it, from a perspective. But that won't happen in the next five years. I don't think so. Because there are still quite, quite a lot of topics. You said it yourself. There are fraud factors, the bitcoins, the value jumps up, jumps down. I cannot say that it will now become a means of payment. Because a means of payment, such as the euro note, also has a value retention function." (Expert 1A)</i>
	Bargaining Power of Buyers	<i>"But the fundamental conflict remains natural. So there's my little mediator on the spot, who always sold car insurance. And suddenly the customer goes to him and says: 'Here, the car insurance, I can get it online'. That is perhaps still cheaper. Well, you can't do that. So you have to balance that. But at the end of the day it's also a distribution battle where you have to say: Perhaps at some point we will no longer need so many intermediaries. Because if the small local agent no longer sells 100 car insurance policies, but only 50, then it is no longer worth it." (Expert 6A)</i>
	Rivalry among Existing Competitors	<i>"The core business of banks still remains what it is. But if the banks and we have that right now!. That is, so to speak, not wanting others to gnaw at their business massively at the edges or to do so in such a way that it really hurts you. Then they have to serve exactly these areas. Especially, as I said, customer loyalty!. All the aspects we have mentioned. Then they would have to adapt and then perhaps they would have to offer services in the future that go well beyond what is known as traditional banking business. That's it. And that's the change, so to speak, and it won't happen overnight." (Expert 7A)</i>

Table 4 Exemplary Interview Guideline for Experts in the Banking Sector (Translated from German)

Question Block	Exemplary Questions
Introduction	1. Introduction of the persons (Interviewee and Interviewer) and the project
About the Own Company/ Institution	1. Can you please describe the role of your company or institution for the financial services sector? 2. What are the emerging themes with regard to digital transformation in the financial service sector for your company/institution? 3. Which influence has digital transformation for you company/institution?
Economic Situation of the Banking Sector	1. On your opinion, how can the economic situation in the financial services sector be described? 2. What about new competitors like FinTechs or existing ones? 3. What is the rule of regulation in the sector?
Development and Status Quo of Business Models	1. How can be a sustainable business model in the financial service sector be described? 2. What are new (technological) innovations and solutions within the sector? 3. What is the role of customers or suppliers in the financial services sector for business models? 4. Are there differences between banks and insurance companies with regard to innovations and why?
Technological and Organizations Changes in the Banking Sector	1. What were the technological and organizational changes in the financial services sector in the past? 2. What are the above mentioned influences on the individual and company level?
Digital Transformation in the Banking Sector	1. What characterize digital transformation in the financial service sector? 2. What new technologies/solutions, e.g., Blockchain, are used within the companies and for what propose? 3. Which companies in the sector are very innovative and why with regard to digital transformation?
Digital Transformation and Work Changes	1. What influences have digital transformation on work changes and work behavior? 2. What influences has the introduction of new technical solutions to the work? 3. Are there positive or negative effects visible and why?
Conflicts Resulting from Digital Transformation	1. What conflicts do you see on an individual or company level forced by digital transformation and connected projects?
Ending Questions	1. Do you have something to add?

References

- Aguilar, F.J.: Scanning the Business Environment. Macmillan, New York (1967)
- Alt, R., Beck, R., Smits, M.T.: FinTech and the transformation of the financial industry. *Electron Markets* (2018). <https://doi.org/10.1007/s12525-018-0310-9>
- Arner, D.W., Barberis, J., Buckley, R.P.: 150 years of fintech: An evolutionary analysis. *JASSA* **3**, 22–29 (2016)
- Avison, D., Myers, M.: Qualitative research. In: Avison, D., Pries-Heje, J. (eds.) *Research in Information Systems: A Handbook for Research Supervisors and their Students*, pp. 239–254. Gulf Professional, Amsterdam (2005)
- Barrett, M., Davidson, E., Prabhu, J., Vargo, S.L.: Service innovation in the digital age: key contributions and future directions. *MIS Q* (2017). <https://doi.org/10.25300/MISQ/2015/39:1.03>
- Beinke, J.H., Ngoc, D.N., Teuteberg, F.: Towards a business model taxonomy of startups in the finance sector using blockchain. In: *Proc. of the 39th International Conference on Information Systems*, pp. 1–10. (2018)

- Beltratti, A., Corvino, G.: Why are insurance companies different? The limits of convergence among financial institutions. *Geneva Pap Risk Insur Issues Pract* (2008). <https://doi.org/10.1057/gpp.2008.13>
- Bharadwaj, A., El Sawy, O.A., Pavlou, P.A., Venkatraman, N.: Digital business strategy: toward a next generation of insights. *MIS Q.* **37**, 471–482 (2013)
- Boemer, M., Maxin, H.: Why fintechs cooperate with banks—Evidence from Germany. *Z. Ges. Versicherungswiss.* (2018). <https://doi.org/10.1007/s12297-018-0421-6>
- Bohnert, A., Fritzsche, A., Gregor, S.: Digital agendas in the insurance industry: the importance of comprehensive approaches. *Geneva Pap Risk Insur Issues Pract* (2019). <https://doi.org/10.1057/s41288-018-0109-0>
- Boot, A.W.A.: Relationship banking: What do we know? *J. Finan. Intermed.* **9**, 7–25 (2000)
- Bruce, C.: Questions arising about emergence, data collection, and its interaction with analysis in a grounded theory study. *Int J Qual Methods* (2007). <https://doi.org/10.1177/2F160940690700600105>
- Chaniias, S., Myers, M.D., Hess, T.: Digital transformation strategy making in pre-digital organizations: the case of a financial services provider. *J. Strateg. Inf. Syst.* (2019). <https://doi.org/10.1016/j.jsis.2018.11.003>
- Charmaz, K.: *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. SAGE, London (2006)
- Csiszar, E., Heidrich, G.W.: The question of reputational risk: perspectives from an industry. *Geneva Pap Risk Insur Issues Pract* (2006). <https://doi.org/10.1057/palgrave.gpp.2510096>
- Cziesla, T.: A literature review on digital transformation in the financial service industry. In: *Proc. of the 27th Bled eConference*, pp. 25–36. (2015)
- Dey, I.: *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists*. Routledge, London (1993)
- Eickhoff, M., Muntermann, J., Weinrich, T.: What do fintechs actually do? A taxonomy of fintech business models. In: *Proc. of the 38th International Conference on Information Systems*, pp. 1–19. (2017)
- Eling, M., Lehmann, M.: The impact of digitalization on the insurance value chain and the insurability of risks. *Geneva Pap Risk Insur Issues Pract* (2018). <https://doi.org/10.1057/s41288-017-0073-0>
- Gerster, D.: Digital transformation and it: Current state of research. In: *Proc. of the 23th Pacific Asia Conference on Information Systems*, pp. 1–12. (2017)
- Gimpel, H., Rau, D., Röglinger, M.: Understanding fintech start-ups—A taxonomy of consumer-oriented service offerings. *Electron Markets* (2018). <https://doi.org/10.1007/s12525-017-0275-0>
- Gioia, D.A., Corley, K.G., Hamilton, A.L.: Seeking qualitative rigor in inductive research: notes on the Gioia methodology. *Organ Res Methods* (2013). <https://doi.org/10.1177/1094428112452151>
- Glaser, B.G.: *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. The Sociology Press, Mill Valley (1978)
- Glaser, B.G., Strauss, A.L.: *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Routledge, New York (1967)
- Grundy, T.: Rethinking and reinventing Michael Porter's five forces model. *Strateg. Chang.* (2006). <https://doi.org/10.1002/jsc.764>
- Gulamhuseinwala, I., Hatch, M., Lloyd, J.: EY fintech adoption index 2017—The rapid emergence of FinTech (2017). [https://www.ey.com/Publication/vwLUAssets/ey-fintech-adoption-index-2017/\\$FILE/ey-fintech-adoption-index-2017.pdf](https://www.ey.com/Publication/vwLUAssets/ey-fintech-adoption-index-2017/$FILE/ey-fintech-adoption-index-2017.pdf), Accessed 23 Nov 2020
- Gupta, A.: Environmental and PEST analysis: an approach to external business environment. *Int. J. Mod. Soc. Sci.* **2**, 34–43 (2013)
- Henriette, E., Feki, M., Boughzala, I.: The shape of digital transformation: a systematic literature review. In: *Proc. of the 9th Mediterranean Conference on Information Systems*, pp. 431–443. (2015)
- Hess, T., Matt, C., Benlian, A., Wiesböck, F.: Options for formulating a digital transformation strategy. *MIS Q. Exec.* (2019). <https://doi.org/10.7892/boris.105447>
- Hirschheim, R., Klein, H.K.: A glorious and not-so-short history of the information systems field. *J. Assoc. Inf. Syst.* (2012). <https://doi.org/10.17705/1jais.00294>
- Holburn, G.L.F., Vanden Bergh, R.G.: Making friends in hostile environments: political strategy in regulated industries. *Acad. Manag. Rev.* (2008). <https://doi.org/10.5465/amr.2008.31193554>
- Karagiannaki, A., Vergados, G., Fouskas, K.: The impact of digital transformation in the financial services industry: Insights from an open innovation initiative in fintech in Greece. In: *Proc. of the 11th Mediterranean Conference of Information Systems*, pp. 1–12. (2017)
- Keller, B.: Big data and insurance: implications for innovation, competition and privacy (2018). <https://www.genevaassociation.org/research-topics/cyber-and-innovation-digitalization/big-data-and-insurance-implications-innovation>, Accessed 23 Nov 2020

- Klein, H.K., Myers, M.D.: A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Q.* (1999). <https://doi.org/10.2307/249410>
- Kutzner, K., Schoormann, T., Knackstedt, R.: Digital transformation in information systems research: A taxonomy-based approach to structure the field. In: *Proc. of the 26th European Conference on Information Systems*, pp. 1–18. (2018)
- Liu, G.C., Lee, C.C.: The relationship between insurance and banking sectors: Does financial structure matter? *Geneva Pap Risk Insur Issues Pract* (2019). <https://doi.org/10.1057/s41288-019-00135-9>
- Matt, C., Hess, T., Benlian, A.: Digital transformation strategies. *Bus. Inf. Syst. Eng.* (2015). <https://doi.org/10.1007/s12599-015-0401-5>
- OECD: *Financial Markets, Insurance and Private Pensions: Digitalization and Finance*. Report. OECD, Paris (2018)
- OECD: *Digital Disruption in Banking and its Impact on Competition*. Report. OECD, Paris (2020)
- Porter, M.E.: *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Simon and Schuster, New York (1980)
- Porter, M.E.: Towards a dynamic theory of strategy. *Strateg. Manag. J.* (1991). <https://doi.org/10.1002/smj.4250121008>
- Pramanik, H.S., Kirtania, M., Pani, A.K.: Essence of digital transformation—Manifestations at large financial institutions from North America. *Future Gener. Comp. Syst.* (2019). <https://doi.org/10.1016/j.future.2018.12.003>
- Puschmann, T.: *Fintech*. *Bus. Inf. Syst. Eng.* (2017). <https://doi.org/10.1007/s12599-017-0464-6>
- Reis, J., Amorim, M., Melão, N., Matos, P.: Digital transformation: a literature review and guidelines for future research. In: *Proc. of the World Conference on Information Systems and Technologies*, pp. 411–421. (2018)
- Riasanow, T., Setzke, D.S., Böhm, M., Krcmar, H.: Clarifying the notion of digital transformation: a transdisciplinary review of literature. *J. Competences: Strateg. Manag.* **10**, 5–36 (2019)
- Rodgers, R., Hunter, J.E., Rogers, D.L.: Influence of top management commitment on management program success. *J. Appl. Psychol.* (1993). <https://doi.org/10.1037/0021-9010.78.1.151>
- Rugman, A.M., Verbeke, A.: Six cases of corporate strategic responses to environmental regulation. *Eur. Manag. J.* (2000). [https://doi.org/10.1016/S0263-2373\(00\)00027-X](https://doi.org/10.1016/S0263-2373(00)00027-X)
- Sarker, S., Xiao, X., Beaulieu, T.: Guest editorial: qualitative studies in information systems: a critical review and some guiding principles. *MIS Q.* **37**, iii–xviii (2013)
- Schmidt, C.: Insurance in the digital age: a view on key implications for the economy and society (2018). <https://www.genevaassociation.org/research-topics/digitalization/insurance-digital-age>, Accessed 23 Nov 2020
- Schuelke-Leech, B.-A.: A model for understanding the orders of magnitude of disruptive technologies. *Technol Forecast Soc Change* (2018). <https://doi.org/10.1016/j.techfore.2017.09.033>
- Schwab, F., Guibaud, S.: The rise of BankTech—The beauty of a hybrid model for banks. In: Chishti, S., Barberis, J. (eds.) *The FinTech Book*, pp. 245–247. John Wiley & Sons Ltd, Chichester (2016)
- Sebastian, I.M., Ross, J.W., Beath, C., Mockler, M., Moloney, K.G., Fonstad, N.O.: How big old companies navigate digital transformation. *MIS Q. Exec.* **16**, 197–213 (2017)
- Silverman, D.: *Qualitative Research*. 4th edn. SAGE, London (2016)
- Stoekli, E., Dremel, C., Uebernickel, F.: Exploring characteristics and transformational capabilities of InsurTech innovations to understand insurance value creation in a digital world. *Electron Markets* (2018). <https://doi.org/10.1007/s12525-018-0304-7>
- Strauss, A.L.: *Qualitative Analysis for Social Scientists*. Cambridge University Press, Cambridge (1987)
- Strauss, A.L., Corbin, J.: *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. SAGE, Newbury Park (1990)
- Vial, G.: Understanding digital transformation: a review and a research agenda. *J. Strateg. Inf. Syst.* (2019). <https://doi.org/10.1016/j.jsis.2019.01.003>
- Wiesche, M., Jurisch, M.C., Yetton, P., Krcmar, H.: Grounded theory methodology in information systems research. *MIS Q.* **41**, 685–701 (2017)
- Yin, R.K.: *Case Study Research and Applications: Design and Methods*, 6th edn. SAGE, London (2017)