

# Digital Orientation in the Financial Industry:

A New Strategic Orientation and its Mechanisms as Antecedents for  
Value Creation



# Radboud Universiteit

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Master's Thesis Strategic Management

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Word count: 9988

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August 13, 2023

## **Abstract**

Digital technology is an increasingly dominant factor when it comes to the creation of value for many firms across many different industries. Both the dangers and opportunities that digital technology present are prevalent in these different industries, including the financial service industry. This research focusses on the relationship between digital orientations and value creation and is conducted as a single case study at Rabobank, one of the largest banks in the Netherlands. By offering insights into the mechanisms of a digital orientation, this research expands on the conceptualisation of the digital orientation and shows which of the mechanisms contribute to the digital orientations' positive effects on firm performance. This research draws on the existing dimensions of digital orientations and sources of digitally enabled value creation in order to shape a theoretical framework. The results of this research show that the mechanisms identified in the theoretical framework each have a positive effect on at least one driver of value creation, and are therefore relevant for firms adopting a digital orientation. The results also show a negative effect of one of the mechanisms, as well as a factor not included in the theory to facilitate the positive effect on value creation of one of the mechanisms.

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# Introduction

Digital technology is becoming an increasingly important factor for determining how businesses create value (Kindermann, Beutel, de Lomana, Strese, Bendig, & Brettel, 2021), where 'digital' encompasses the creation of, and changes in market offerings, business processes, or models that result from the use of digital technology (Nambisan, Lyytinen, Majchrzak & Song, 2017). In the financial service sector, increased digitisation accompanied by the emergence of new entrants, has generated significant changes for both consumer demands and banks, and forced banks to redefine their business models and methods for creating value (Mărăcine, Voican, & Scarlat, 2020). To create value, firms require technology and strategy, where both act as drivers of successful digital transformation in order to gain competitive advantage and thus long-term viability (Kane, Palmer, Phillips, Kiron, & Buckley, 2015). A firm's strategic orientation can play a vital role in this transformation process, as it determines the strategic directions a firm takes, and the way by which the firm creates and adapts the behaviours and resources it has for continuous competitive advantage (Gatignon & Xuereb, 1997). Strategic orientations recognised in existing literature, or combinations thereof, have not been sufficient to capture digital technology's capacity to challenge traditional competition logic (Quinton, Canhoto, Molinillo, Pera, & Budhathoki, 2018). Even though these combinations can provide increased organisational performance, they lack focus on taking advantage of the opportunities presented by emerging digital technologies, which is becoming more prevalent in an increasingly digital business environment (Theodosiou, Kehagias, & Katsikea, 2012). Therefore, the concept "digital orientation" was developed.

A digital orientation is defined as "the deliberate strategic positioning of a firm to take advantage of the opportunities presented by digital technologies" (Quinton et al., 2018). It provides organizations with strategic directions for implementing and nurturing specific digitalisation strategies and selecting appropriate digitalisation initiatives (Kindermann et al., 2015). This can consequently lead to increased organisational performance (Nasiri, Saunila, & Ukko, 2022; Kindermann et al., 2015). However, existing literature on strategic orientations fails to underline the mechanisms by which new ways of digitally enabled value creation are conceived in order to gain advantages over competing firms (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013).

Ambiguity exists surrounding the organisational mechanisms specifically associated with a digital orientation (Ardito, Raby, Albino, & Bertoldi, 2021). These mechanisms illustrate how a firm aims to create value for its stakeholders and itself, and are part of the firm's business model (Leppänen, George, & Alexy, 2023). As the mechanisms contribute to the development of the strategic direction of a firm, they are determinants of the firm's strategic orientation; mechanisms aimed at value creation

by digital means constitute a digital orientation and consequently contribute to organisational performance (Parmar et al., 2014; Nasiri et al., 2022). For organisational performance, value creation is considered an important indicator (Costa & Zemsky, 2021).

In existing literature, there is a lack of consensus on what the concept of value creation entails (Lepak, Smith, & Taylor, 2007). Lepak et al. (2007) point out that value creation includes value for customers and for the firm itself. Therefore, the concept of value creation is defined in this research as: “innovation that establishes or increases the quality of usage or application of products, services, or processes; or increases the monetary amount received from transactions” (Lepak et al., 2007). This definition of value creation is suitable for this research, as the mechanisms contributing to a digital orientation do not only affect the value for the customer, but for the firm itself as well (Parmar, Mackenzie, Cohn, & Gann, 2014).

The objective of this research is to gain insight into the mechanisms by which a digital orientation contributes to successfully creating value. This research therefore aims to provide an answer to the following question: *How does a digital orientation influence value creation for Dutch banks?* As the concept of digital orientation was developed recently, existing literature on the subject remains limited. Even though some prior research has been conducted on digital orientations, this is mostly focused on its relationship with firm performance (e.g. Quinton et al., 2018; Nasiri et al., 2022). Little research has been conducted on what specific mechanisms lead to performance gains (Ardito et al., 2021). This research therefore fills a knowledge gap. In practice, the results of this research can be used by firms that are not experiencing performance gains from a digital orientation. The underlying mechanisms that enhance the degree of digital orientation and aid in creating value, as identified in this research, may be lacking in their own organisation. Incorporating these mechanisms allows firms to improve their performance.

This research proceeds with the theoretical framework, presenting an in-depth review of existing literature on the main concepts and a conceptual model that illustrates the relationship between them. The subsequent section explains the methodology, which includes the operationalisation of the main concepts and a description of the method that was used to collect data for this research. Next, results of the data collection are presented and analysed. After this, the answer to the research question is presented in the conclusion, which is followed by a discussion concerning the implications and limitations of the results, and recommendations for future research.

# Theoretical framework

In this section, the theories and frameworks relevant to the topic being studied will be reviewed. First, the concept of digital orientation, its dimensions, and the mechanisms associated with these dimensions will be discussed. This will provide a better overview of what a digital orientation entails. Second, the concept of value creation in the context of digital technologies will be discussed to provide insight into the different strategic aspects of value creation in organisations experiencing an increasing amount of digital innovation. Third, the relationships between the mechanisms of a digital orientation, and the concept of value creation are integrated into a proposed conceptual framework.

## Digital orientation

Over the past three decades, much research has been conducted on the positive impact of strategic orientations on firm performance (Schweiger, Stettler, Baldauf, & Zamudio, 2019). Zhou, Yim and Tse (2005) state that strategic orientations reflect a firm's philosophy of how to conduct business through deeply rooted sets of values and beliefs that guide the firm's attempt to achieve superior performance. When explaining how firms can realize performance gains through strategic orientations, existing research often refers to the resource-based view (Barney, 1991). According to the resource-based view, superior firm performance is attributable to resources that are firm-specific, rare and difficult to imitate by rival firms, and this is also represented through strategic orientations (Khin & Ho, 2019). When applying the resource-based view on a firm's use of digital technology, Cuthbertson and Furseth (2022) argue that digital technology, and thereby digitisation, can be a value-adding resource, but does not provide a retainable competitive advantage. A distinction is made between operand resources – resources that require action taken upon them to be valuable – and operant resources – resources capable of acting on other resources to contribute to value creation (Akaka & Vargo, 2014). Digital operand resources, such as data that can be exploited to provide competitive advantage, are generally rare and difficult to imitate but experience decreases in value over time (Cuthbertson & Furseth, 2022). Digital operant resources, such as algorithms employed to act upon certain data sets, experience decreases in value, inimitability, and rarity over time (Cuthbertson & Furseth, 2022). From this, it can be concluded that digital technologies are value-adding resources in the short term, but require continuous innovation to remain so in the long term (Cuthbertson & Furseth, 2022).

Different types of strategic orientations exist, such as customer orientation, competitor orientation, and technology orientation (Gatignon & Xuereb, 1997). The existing strategic orientation that was previously most often used regarding digitisation was technology orientation (Nasiri et al., 2022). But a separate strategic orientation has been recognised to reflect how firms can reap the benefits of the opportunities provided by digital technologies through understanding, and commitment to use them (Arias-Pérez & Vélez-Jaramillo, 2022). This new strategic orientation, the digital orientation, was only recently developed. However, some prior research has been conducted on digital orientation in which the concept is operationalized and divided into four dimensions: digital technology scope, digital capabilities, digital ecosystem coordination, and digital architecture configuration (Kindermann et al., 2015).

The four dimensions of digital orientation are based on the Strategic Alignment Model of Henderson & Venkatraman (1999). The SAM is aimed at conceptualizing and directing strategic management of information technology (Henderson & Venkatraman, 1999). It combines strategic fit, the interrelationships between internal and external components, with functional integration, the integration between business and functional domains (Henderson & Venkatraman, 1999). From this, four dimensions (internal-technological, internal-organizational, external-technological, and external-organizational) are derived and used to identify the dimensions of digital orientations (Kindermann et al., 2015). As the four dimensions of digital orientations are based on the SAM, it can be stated that they were developed whilst taking into consideration the need for integration between business strategy and IT strategy; both important components for firms attempting to create value through digital technology. It is important to note here that the dimensions of a digital orientation delineate the different strategic aspects of a digital orientation, without offering direct insight into its organisational processes. Therefore, the dimensions contain mechanisms. The mechanisms are associated to each of the separate dimensions, explaining how the dimensions of a digital orientation are manifested in practice. Ultimately, the mechanisms act as a means of systematically exploiting the value drivers associated with digitisation, thereby opening up new avenues for the creation of value.

The first dimension of digital orientation, *digital technology scope*, is described by Kindermann et al. (2015) as firm-specific sets of technologies that determine the scope to which the firm can create digitally enabled value for its customers. Digital technology scope encompasses the features and functionalities of technological products and services, and the combined value of these to customers (Kindermann et al., 2015). This can be explained by the affordance-based approach, which states that the ways by which the attention of the users becomes intertwined with material elements of IT produces new possibilities for added value of digital innovations (Faik, Barrett, & Oborn, 2020). Considering that digital technology scope relates to the combination of the technological



developments of the firm and their value to customers, it can be deduced that digital technology scope is part of the external- technological dimension of the SAM (Henderson & Venkatraman 1999). Digital technology scope is ultimately defined as “the set of digital technologies that allow the firm to realize strategic growth” (Kindermann et al., 2015). Digital technology scope is reflected through the mechanism *augmentation of products*, referring to the improvement of the design, operation, and maintenance of products and services by means of digital technology and data generated by physical objects, allowing for novel ways in which these create value (Parmar et al., 2014). The functionality of products and services and the value proposition associated with them can be upgraded by making effective use of digital technology, as the way value is generated and captured evolves through their augmentation (Nasiri, Saunila, Ukko, Rantala, & Rantanen, 2020). According to (Nylén & Holmström, 2015), digital products and services can be augmented and turned into sources of additional value if these offer high levels of usability, possess carefully designed aesthetic properties, and evoke engagement with their users.

The second dimension of digital orientation, *digital knowledge integration*, includes organizations’ efforts to develop and maintain routines that leverage human capital and knowledge assets to engage with a specific set of digital technologies (Kindermann et al., 2015). The routines involved are located at the organizational level, rooted in technological skills of employees (Kindermann et al., 2015). As Leonardi (2011) points out, both human and organisational aspects of digital knowledge integration are reflected via the affordance-based approach in organisational routines that are maintained and developed internally for a specific selection of technologies (Kindermann et al., 2015). This process is intertwined with the infrastructure under which an organisation operates, meaning that this dimension falls under the internal-organizational domain of the SAM, capturing the internal management skills needed when implementing a certain strategy that involves using specific digital technologies (Henderson & Venkatraman, 1999). Alignment of organisational strategy with these digital technologies allow competitive advantage to be gained from them. Digital knowledge integration has *knowledge acquisition* as its associated mechanism, which refers to the process of identifying and developing capabilities that enable a firm to make effective use of digital technologies for internal purposes, or as a means to roll out digital products or services, creating new sources of value (Parmar et al., 2014). These capabilities are developed by reorganising internal processes, or by acquiring new assets that add to the firm’s knowledge base and contribute to the required capabilities (Bosler, Burr & Ihring, 2021).

The third dimension of digital orientation, *digital ecosystem coordination*, ensures account is taken of the interdependencies that can develop within the digital ecosystem a firm is located in, which can be important when making strategic decisions (Adner & Kapoor, 2010). A digital ecosystem is defined as “a collective of firms that is inter-linked by common interest in the prosperity of a digital technology for materializing their own product or service innovation” (Selander, Henfridsson & Svahn, 2013). Firms can combine digital technologies to develop digital platforms, around which ecosystems emerge in which innovative efforts of the ecosystem’s members are combined (Koch & Windsperger, 2017). Regardless of where in the digital ecosystem a firm might find itself, it might choose to develop competencies or acquire resources it needs as a means of shaping the governance structures that regulate value creation in the ecosystem, thereby leveraging the interdependencies in the ecosystem (Kindermann, 2015). This focus on the external use of governance structures means that digital ecosystem coordination can be characterised by the external- organizational domain of the SAM. Digital ecosystem coordination captures how effectively firms interact and coordinate with others in an open and innovative ecosystem, and contributes to firms’ competitive advantage (Kindermann, 2015). In practice, digital ecosystem coordination is achieved by *combining data within and across industries* and *trading data*. Combining data within and across industries highlights how to integrate and use data held by other parties, allowing for greater coordination between firms and facilitating the acquisition of new knowledge for digital innovation (Parmar et al., 2014). By acknowledging potential sources of information inside and outside its own industry, firms can combine different sources of innovation and knowledge, to integrate them into internal processes, use them to configure new products and services, or complement existing digital assets (Amit & Han, 2017). Through cooperation with other firms, networks can be created where knowledge flows surrounding new digital tools, products, and services contribute to the pursuit of radical digital innovations, which often prove to be new sources of value (Lyytinen, Yoo, & Boland, 2016). Trading data points to the possibility for firms to sell or exchange data in order to gain higher-value information (Bleicher & Stanley, 2016). Firms who trade data aim to combine different data sets in order to develop new products or processes, creating new opportunities for added value and performance gains (Parmar et al., 2014). This mechanism is therefore closely related to combining data within and across industries. As prior research has shown, the success of an individual firm’s technological developments is often dependent on the innovative capacity of other firms in the external environment, and trading knowledge in the form of data can be an important catalyst for the development of digitally enabled sources of value (Adner & Kapoor, 2010; Nasiri et al., 2020).

The fourth and final dimension of digital orientation, *digital architecture configuration*, is closely related to generativity. Generativity refers to the dynamic design of digital technologies and innovations, which can change as these transfer through dispersed but coordinated organisational departments or teams (Koch & Windsperger, 2017). The configuration of a firm's digital architecture acts as a tool for repurposing or redeveloping digital innovations (Kindermann et al., 2015). However, generativity can also have negative effects on digital innovations, as the openness created by generativity may cause unwanted features to be added. Digital architectures should therefore be configured to balance control and generativity (Kindermann et al., 2015). The digital architecture configuration is represented in the SAM by the internal- technological domain, as it describes that digitally oriented firms facilitate digitalisation and digital innovation by designing compatible organizational structures and digitising internal processes (Kindermann et al., 2015). The associated mechanism, *digitising assets*, refers to turning assets that are physical or partially digital into fully digital assets (Bleicher & Stanley, 2016). Digitised versions of physical assets transform the way people operate inside an industry, and firms that can successfully integrate these assets into their operations will function more effectively in an increasingly digital environment, gaining competitive advantage (Parmar et al., 2014). This development can be explained by shifting consumer demands, requiring more options and personalized services (Parmar et al., 2014).

## Value creation

The creation of value, both value for consumers and value for firms, is considered an important determinant of the performance of firms, as value creation contributes to the generation of competitive advantages (Lepak et al., 2007). When firms create value by digital means, the advantages that arise from this are mostly temporary (Cuthbertson & Furseth, 2022). Still, the creation of these temporary advantages allows the firm to create new value whilst maintaining the value created in previous periods (Sirmon, Hitt, & Ireland, 2007). This is especially important when dealing with the constantly evolving nature of digital technology (Sirmon et al., 2007).

As mentioned earlier, there are certain mechanisms that determine to what degree a firm has a digital orientation (Parmar et al., 2014). But in order to explain how a digital orientation and the mechanisms associated with its dimensions affect value creation, more clarity has to be provided on what drives value creation. Value is driven by factors that enhance the total value created by a business, which can then be appropriated by the participants in business transactions (Brandenburger and Stuart, 1996). Four key sources of value by digital means are identified: efficiency, complementarities, lock-in, and novelty (Amit & Zott, 2001).

*Efficiency* as a source of value can relate to a variety of measures a firm can take, for instance reducing information asymmetries between seller and buyer, speeding up transactions, or streamlining internal organisational communications (Amit & Zott, 2001). In this context, efficiency is centred around information flows, which allow a firm to perform certain processes faster and less costly than their competitors (Zott & Amit, 2007). *Complementarities* are present whenever having certain skills or resources together provides more value than the total value of having each of them separately (Amit & Zott, 2001). Complementarities can exist through the products and services different firms offer to the same customers, through the combination of a firm's internal assets and knowledge, or by combining these with other firms in their network (Amit & Zott, 2001; Gulati, 1999). *Lock-in* affects a firm's potential for value creation by enhancing the extent to which customers are motivated to engage in repeat transactions, and by incentivising strategic partners to maintain and improve cooperation (Amit & Zott, 2001). Therefore, by preventing partners and customers from choosing for a competitor, lock-in safeguards the value-creating potential of a firm (Amit & Zott, 2001). *Novelty* concerns the conceptualization and adoption of new ways of conducting transactions, or new organisational processes (Zott & Amit, 2007). Novelty can be exploited as a driver of value by, for instance, introducing new products or services, new methods of production or distribution, or by tapping into new markets (Amit & Zott, 2001).

## Relation between digital orientation and value creation

Now that a detailed overview of the core concepts has been provided, these concepts can be linked together by means of a set of propositions. Thereafter, they can be integrated into a proposed conceptual framework showing the relationships between the mechanisms of a digital orientation, and value creation. The purpose of this framework is to illustrate that the effect of a digital orientation on value creation is dependent on multiple mechanisms, and affects different aspects of value creation. Furthermore, the framework shows that each of these mechanisms is related to a specific dimension of a digital orientation.

Digital technology scope reflects to what degree digitally oriented firms make use of digital technology to increase their offering of products and services, and enhance these to the benefit of their customers. By applying digital technologies to product and service offerings, additional value is created (Kindermann et al., 2015). As the augmentation of products is shown to increase functionality and adapt value propositions (Nasiri et al., 2020), it can be stated that the degree to which firms make use of product augmentation broadens digital technology scope. Augmentation of products creates value by allowing new complementarities to be unlocked, customers to be locked-in with new features to fulfil their demands, and novel products to be brought to market (Nylén & Holmström, 2015). Therefore, the following is proposed:

*Proposition 1a: Augmenting products positively affects complementarity.*

*Proposition 1b: Augmenting products positively affects lock-in.*

*Proposition 1c: Augmenting products positively affects novelty.*

Firms can create networks that enable value-creating interactions between themselves, other firms, and external stakeholders. Making use of digital ecosystem coordination allows firms to create governance structures that regulate the knowledge that is shared with the members of the digital ecosystem (Kindermann et al., 2015). Digital ecosystem coordination determines to what degree ecosystem partners contribute to the creation and adaptation of digital product, services, and processes through the exchange of data (Koch & Windsperger, 2017). *Trading data* and *combining data across and within industries* both relate to the exchange of data between a firm and its ecosystem (Parmar et al., 2014), contributing to the shaping of digital ecosystems. Due to this overlap they are integrated into the conceptual framework as one single mechanism, called “*data exchange*”. The coordination within a firm’s ecosystem through data exchange creates value through an increasing degree of complementarities, novel products created through the combination of knowledge, and lock-in effects with strategic partners in the firm’s ecosystem (Lyytinen et al., 2016; Kindermann et al., 2015). All this leads to the following propositions:

*Proposition 2a: Data exchange positively affects complementarity.*

*Proposition 2b: Data exchange positively affects lock-in.*

*Proposition 2c: Data exchange positively affects novelty.*

Firms that make use of digital architecture configuration are able to develop generativity, meaning that assets can be transferred throughout the organisation and repurposed or redeveloped (Kindermann et al., 2015). Through the process of digitisation, these assets can be transferred more easily (Bleicher & Stanley, 2016). As mentioned earlier, digitised versions of physical assets transform the way people operate inside an industry. This facilitates and makes it more likely for firms to implement organisational designs that allow them to convert formerly analogue routines into digital routines, indicating a digital architecture configuration (Kindermann et al., 2015). From this it can be concluded that the digitisation of assets contributes to digital architecture configuration, and thus to a digital orientation. The digitisation of assets allows them to be transferred through the organisation at a higher pace, reducing communication time and facilitating generativity (Parmar et al., 2014; Kindermann et al., 2015). Based on this, the following is proposed:

*Proposition 3: Digitising assets positively affects efficiency.*

Firms attempting to increase their base of digital knowledge, strive to acquire individuals and competencies that enable them to digitise value creating processes, products, and services (Kindermann et al., 2015). By identifying, developing, and maintaining routines that leverage human capital, knowledge, and physical assets to engage with digital technologies, distinctive routines that allow for effective use of digital technology for internal purposes or product development are codified (Bosler et al., 2021). As the framework shows, the knowledge-related dimension of a digital orientation and its associated mechanism are grouped separate from the other dimensions. The reason for this is that digital knowledge integration should be regarded as a higher-order dimension, and knowledge acquisition as a higher-order mechanism. Without knowledge on new technological developments, relevant partners in the ecosystem, or means necessary for digitisation, none of the other mechanisms can operate effectively. Therefore, the knowledge acquisition mechanisms affects the other mechanisms and therefore also all drivers of value creation, leading to the following propositions:

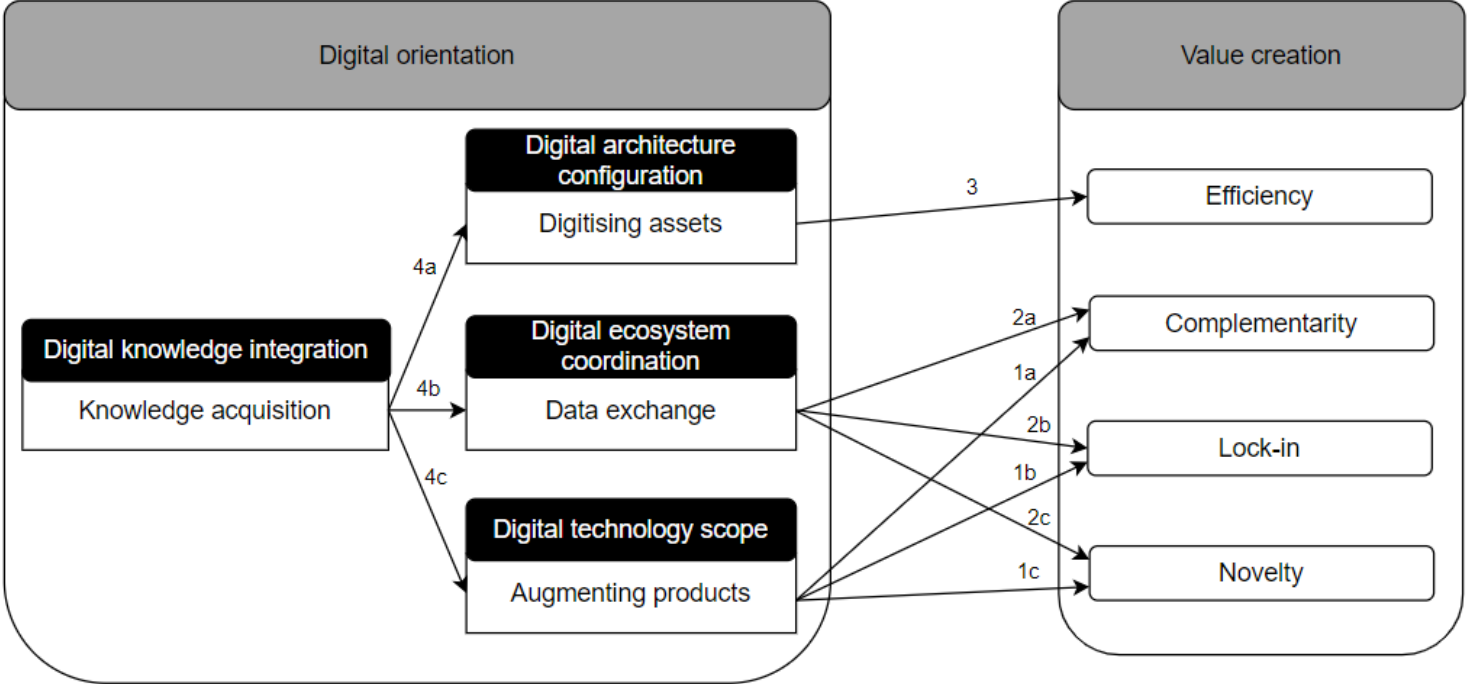
*Proposition 4a: Knowledge acquisition positively affects digitising assets.*

*Proposition 4b: Knowledge acquisition positively affects data exchange.*

*Proposition 4c: Knowledge acquisition positively affects augmenting products.*

The theoretical framework, combined with the propositions, allowed the core concepts of this research to be integrated into a conceptual model, as shown below. The model shows the different dimensions of a digital orientation, their associated mechanisms, and the expected relationships with the various sources of value creation. The arrows showing the effects and their directions are numbered in accordance with the propositions.

Figure 1: Conceptual framework showing the expected relation between digital orientation and value



# Methodology

This section explains the methodology applied in conducting this research. It discusses the selected research method and design, the context and sample of the research, research ethics, the operationalisation of the core concepts used in conducting the research, and a description of the data analysis process.

## Research method and design

For conducting this research, two different methods could be used: an inductive approach or a deductive approach. This research is deductive in nature, where a general theory about a certain topic is used for which a hypothesis is either confirmed or denied (Myers, 2019). However, the aim is to gain additional insights on the main concepts and their relations, which is considered an element of abductive research (Timmermans & Tavory, 2012). A sufficient body of scientific literature surrounding the topic of this research exists and has been used to develop a theoretical framework, resulting in the development of a set of propositions which have been assessed based on the analysis of qualitative data.

The design of this research follows that of a case study. In order for a case study to be a suitable research design, the focus should be on determining the nature of the relationship between certain phenomena, where the behaviour and decision-making processes of those involved in the research cannot be manipulated, and contextual conditions have to be covered as these are relevant to the variables being studied (Yin, 2003). As this research is focused on uncovering the mechanisms that determine the relationship between two phenomena, a digital orientation and value creation, a case study makes for a suitable research design (Vennix, 2019). Furthermore, making statements about phenomena and the underlying mechanisms that shape their relationship requires in-depth insights, for which a single-case study research design is most suitable (Vennix, 2019).

As this is a qualitative study, data will be collected by means of interviews. These interviews will be conducted in a semi-structured way as this provides some degree of structure, but does not restrict the respondents to add important insights as they arise during the course of the interview (Myers, 2019).

## Research context and sample

This research is conducted within the Dutch financial service sector. The financial service sector, which has remained relatively stable in the past, is experiencing large shifts in competitive dynamics, regulatory changes, and is increasingly competed with by non-banks (Dehnert, 2020). The



products and services that banks traditionally offered were difficult to differentiate due to the high degree of regulation in the financial service sector (Dehnert, 2020). But the effects of digital technologies in this sector have been very prevalent, by allowing for new ways of competition amongst financial service providers, new entrants to join the market, and new ways of creating value (Alt & Puschmann, 2012; Dehnert, 2020). This makes the financial service sector a suitable context in which to investigate the relationship between a digital orientation and value creation.

The organisation chosen as the subject of this research is the Rabobank. The Rabobank has a market share of twenty-six percent in the Netherlands, and made a net profit of nearly 2.8 billion euros in 2022 (Rabobank, 2023). This makes it the second-largest bank in the Netherlands, behind ING (Orbis, n.d.). Rabobank is a large incumbent and a cooperative bank (Rabobank, 2023), meaning that it has extensive activities in the financial service sector and is therefore very much affected by the changes induced by digital technologies. Due to its cooperative nature, large amounts of information regarding the bank and its activities are publicly available (Rabobank, 2023). This allowed sufficient amounts of data to be collected for analysis.

The sample of this research contains six employees of the Rabobank. In existing research, there is no real consensus on what number of interviews produce a sufficient amount of data in order to draw reliable and valid conclusions; some research claims at least twelve interviews should be conducted (Guest, Bunce, & Johnson, 2006), some between twenty and forty interviews (Hagaman & Wutich, 2017), and some as little as five interviews (Constantinou, Georgiou, & Perdikogianni, 2017). But as Myers (2019) points out, the number of interviews is less relevant than the quality of the data that is received from the interviews. Once the point of saturation has been reached and no new insights are being discovered, further interviews are of no added value to the research (Myers, 2019). In order to gain a variety of perspectives in this research, employees from different management layers and different departments with relevant expertise on the subject being researched were interviewed.

### **Reliability and validity**

When it comes to the reliability and validity of the research, both are safeguarded. In order to guarantee the reliability of this research, measures must be taken in order to make the results of this research reproducible (Vennix, 2019). The reliability of this research is controlled by providing the interview protocol (see Appendix A), interviews transcripts, and coding scheme. Any researcher can use these in order to verify the results of this research.

As Golafshani (2003) points out, an important factor for determining the validity for any research is the degree to which its results are generalisable. As this research concerns a single case study, external validity is inherently lower (Gibbert, Ruigrok & Wicki, 2008). However, Yin (2003) states

that results derived from a single case study may still be generalisable, as long as the case that was selected is sufficiently representative for the context or population to which the results of the research are generalised. As mentioned before, the case that was selected for this research is a large player in the Dutch financial sector and greatly affected by developments in digital technologies, making it a representative case for the Dutch financial sector. The internal validity is generally high, and in this study internal validity is controlled by formulating a clear research framework, through pattern matching the empirical data by means of coding, and by making use of data triangulation (Gibbert et al., 2008).

### **Data analysis**

The information on the core concept of this research that was gathered from existing literature and reviewed in the theoretical framework, forms the basis for conducting interviews as a means of gathering qualitative data. This corresponds with performing a deductive research (Myers, 2017). The source of the data for this research, the interviews, are transcribed and coded using Atlas.ti coding software. This research makes use of inductive coding, where close reading of raw data is followed by assigning labels to categories containing meaningful excerpts of data (Thomas, 2006). Inductive coding is generally aimed at developing a theory (Thomas, 2006). As this research aims to expand on the theory surrounding digital orientations by identifying its mechanisms, inductive coding is suitable.

After transcribing the interviews, codes were assigned to excerpts of the transcripts that were relevant to one or more particular codes. Excerpts of the transcripts that were labelled with the same code were grouped together in order to compare and contrast similar statements in the qualitative data, allowing for the recognition of patterns. An overview of these code groups is provided in the coding scheme. The result of this process is an in-depth analysis of the qualitative research data, moving towards an answer to the main question of this research.

### **Operationalisation**

In the theoretical framework, the core concepts of this research were defined and existing research surrounding these concepts was reviewed. In order to collect data for this research, the core concepts described in the theoretical framework have been operationalised. Each concept is divided into dimensions, which consist of interview topics. The topics provide a basis for the interview protocol and the interview questions which are used to collect data. The topics provide data to their respective dimensions, and thus give more insight into the theoretical concept they relate to.

The concept of digital orientation is initially divided into four separate dimensions, corresponding with the four dimensions of digital orientation as mentioned by Kindermann et al. (2015). Each of these dimensions is subsequently measured through interview topics. These interview topics are derived from the research of Parmar et al. (2014), and serve to analyse the proposed mechanisms of digital orientations, as well as gain additional insights on them. By inquiring into the use of digital technology in the updating of products and the consequences this has on their value proposition, insights can be gained on whether the bank applies the augmentation of products. Questions about the facilitating of learning and the importance of knowledge in the hiring process gains a better understanding of the knowledge acquisition mechanism. The data exchange mechanism is evaluated through by determining if the bank exchanges data and whether this leads to an expanded offering. Questions regarding the attitude towards digitisation and its compatibility with the organisational structure give insights into the digitising assets mechanism.

*Table 1: Operationalisation of digital orientation*

<b>Concept</b>	<b>Dimensions</b>	<b>Interview topics</b>
Digital orientation	Digital technology scope	<ul style="list-style-type: none"> <li>- Use of digital technology in updating products and services</li> <li>- Changes in value proposition of products and services due to augmentation</li> </ul>
	Digital knowledge integration	<ul style="list-style-type: none"> <li>- Facilitation of learning programmes for employees</li> <li>- Selection of new employees based on knowledge of emerging technology</li> </ul>
	Digital ecosystem coordination	<ul style="list-style-type: none"> <li>- Possibilities for data exchanges with external partners</li> <li>- Generation of new products or services due to data exchange</li> </ul>
	Digital architecture configuration	<ul style="list-style-type: none"> <li>- Commitment to digitisation within the firm</li> <li>- Compatibility of digitisation with organisational structure</li> </ul>

The concept of value creation is also divided into four separate dimensions, in accordance with Amit & Zott (2001). The interview topics through which value creation is measured are similarly derived from their research, and allow for an understanding of whether digitally enabled sources of value are recognised and exploited within the subject organisation. The same goes for any sources of value creation not included in the theoretical framework that may be mentioned in the interviews. As efficiency in a digital context revolves around communication, questions regarding information asymmetry, the effects of communication on the work process, and external communication gain insights into this source of value creation. Complementarity is viewed both internally and externally through the interview question, thereby considering both perspectives of this source of value creation. Two means of achieving lock-in are considered in the interview questions, meaning that retention of partners and customers as a source of value creation in the subject organisation can be assessed. Finally, by viewing novelty as a product of continuous improvement and knowledge integration, the interview questions can offer more insights into the awareness and exploiting of this source of value.

Table 2: Operationalisation of value creation

Concept	Dimensions	Interview topics
Value creation	Efficiency	<ul style="list-style-type: none"> <li>- Information asymmetry between or within departments</li> <li>- Effect of digital communication on work process</li> <li>- Effect of digital communication on transactions with external partners and customers</li> </ul>
	Complementarity	<ul style="list-style-type: none"> <li>- Combination of digital and analogue assets</li> <li>- Technology links with strategic partners</li> </ul>
	Lock-in	<ul style="list-style-type: none"> <li>- Customers' ability to make personal configuration of offerings</li> <li>- Use of loyalty programmes</li> </ul>
	Novelty	<ul style="list-style-type: none"> <li>- Continuous improvement of offerings</li> <li>- Integration of information flows</li> </ul>

## Research ethics

When conducting scientific research, measures have to be taken in order to safeguard the integrity of the research. In order to ensure that this research was conducted ethically, the researcher has adhered to the guidelines posed by the VSNU (Association of Universities in the Netherlands). The VSNU has created a code of conduct for all those who conduct scientific research, surrounding five principles: scrupulousness, reliability, verifiability, impartiality and independence (VSNU, 2004). The following measures ensure that research ethics are taken into account and that academic integrity is safeguarded in accordance with the VSNU code of conduct (VSNU, 2004).

The researcher has ensured that the respondents of the research have given clear consent to be a part of the research. Their consent for the interviews to be recorded has been asked and it has been clearly explained to what end these recordings will be used: exclusively for academic purposes. Once the research project has been completed, every copy of the recordings is destroyed. The privacy of the respondents is guaranteed, as no names are mentioned in the final research report or interview transcripts. Work titles are only included in the appendices to provide proof of the respondents' expertise. The appendices will be read exclusively by the supervisor and second examiner and are not included in the version of the report uploaded to the Radboud thesis repository. Correct use of references is made, ensuring that no credit is taken for the work of another. When using a reference, APA guidelines are followed. The researcher provides transcripts of the interviews and avoids selective presentation of results. By providing a detailed description of the research process, and any choices regarding the design of the research, the researcher guarantees that his work is reproducible. The researcher ensures that there can be no doubt that the results of this research are exclusively intended to make a scientific contribution; no commercial or political motives are involved. Lastly, this research is conducted independently and not in service of a third party, ensuring that there can be no outside influence on the results of this research.

## Results

In the following section, the main findings of this research are presented. The data that was collected from the interviews is analysed, allowing for confirmation or rejection of the propositions that were posed in the theoretical framework. This will ultimately allow for posing an answer to the main question of this research: *How does a digital orientation influence value creation for Dutch banks?*

### Augmenting products

The data from the interviews shows that the augmenting products mechanism is indeed present within Rabobank. As most of the products and services they offer are in digital form, it is to be expected that digital technology is also used to augment them. However, the use of digital technology is not the primary focus when it comes to the augmentation of products: *“The use of technology is not the starting point. An improved product is what we are aiming for, a better experience for the customer. But the involvement of digital engineers in this process is unavoidable”* (interview 1).

Augmentation of products affects value creation, as it offers an increased potential for complementarity. Augmentation of products, services, or platforms on which these are offered allow Rabobank to establish technological links with external parties, which offers new possibilities for complementarities, and thus value creation. An example of this mentioned in the interviews is banking-as-a-platform, achieved by augmenting the service offering with API software: *“So what we are currently investigating and moving towards is: how can we offer non-banking products to our customers, or maybe products from third parties? This is a relevant theme in the banking sector: banking-as-a-platform. How can you ensure you become the platform where customers can find everything they need to run their business well? You’ll end up with API connections. This way you’ll integrate and connect customer journeys and offer complementary services”* (interview 5). Cooperation with external partners allow Rabobank to create technological links, allowing both sides to contribute to generating a new service or product and offer these to the market together, or to share the platform on which they offer their services. The nature of these forms of cooperation is somewhat dependent on the size of the firms they cooperate with: *“Sometimes we cooperate with very large parties. Last year for instance, we did a project together with Microsoft. That gave us the opportunity to get a look at the platforms they have in place and the possibilities to offer services together. At the same time, we see that smaller parties we cooperate with may not always have very extensive processes on their own platform, which makes our platform more interesting to them”* (interview 2). Overall, the results of the interviews support proposition 1a.

The interviews have shown that product augmentation affects value creation through increased lock-in. In the Rabobank app, customers have some degree of control over the configuration of services they use, but this mostly pertains to the standard services that the vast majority of customers use: *“What we do is that for a lot of the functionalities we offer, customers always have the choice of whether they want to make use of it or not”* (interview 3). Here, product augmentation occurs by allowing customer input in a digital environment to aid the development of the service offering: *“We experiment in our organisation and let it be reviewed and approved internally. We create a sort of digital sandbox in which customers can experiment and offer ideas on further improvements, which helps us keep them on board. We create a separate environment in our app for which customers can register, and tell us what functionalities best fit their needs”* (interview 2). By using customer input in a digital environment to augment their offerings, Rabobank’s customers are less inclined to switch to competitors and lock-in effects increase, which means proposition 1b can be accepted.

Product augmentation appears to affect value creation through increased novelty, but only to a limited extent. There is a process of continuous improvement of products and services at Rabobank, but this generates entirely new processes or services only in a small capacity. An example of this was mentioned in the interviews: *“Product innovation is something we also do. Based on PSD2 you are able to connect an account from, for example, ABN, to us and you can also see this in our mobile application”* (interview 4). By augmenting the usability of their digital platform and application in accordance with PSD2 regulations, Rabobank can extend its services to a new segment of customers with an account at a different bank. This is an example of novelty achieved through product augmentation, showing that proposition 1c can be accepted. However, it should be mentioned that the majority of examples in the interviews concerned adjustments to existing products or services without leading to adoption of new transaction methods or organisational processes, thereby not affecting novelty. One such example was allowing customers to use the mobile application to transfer sums of money without needing a digital signature, whereas in the past this was required: *“Using the app you can simply transfer, let’s say five hundred euros. So, you won’t have to bother with digital signatures. You won’t need that little device anymore, the Rabo scanner. (interview 4).*

## **Data exchange**

From the interviews it could be concluded that data exchange is used by Rabobank, but that this is restricted. The reason for this is regulations imposed on the financial service sector to which Rabobank must adhere. Exchanges of customer data with external partners do occur, but only if permitted: *“We have an internal data manifesto which we use when it comes to handling data, as it is still our customer’s data which we use to support our services. But it remains their data. We want to be*

*very transparent if we cooperate with a partner as a customer always has to give their consent. So, they will know where their data will go and for what purpose”* (interview 3). Data regarding internal processes is rarely shared with external parties, except when internal processes designed or supplied by external parties are malfunctioning: *“With regards to technical processes, for example an application malfunctioning, we create a sort of dump file, a log file. This log file can be sent to our supplier so they can analyse it, on the condition that it does not contain customer data. That is one of our policies, ensuring that log files do not contain customer data. Otherwise you aren’t allowed to send it”* (interview 4).

The interviews suggest that data exchange positively affects complementarity. With consent of customers, Rabobank can exchange customer data with external parties in order to offer products on external platforms. The external party is then responsible for distributing these products and customers have no need to use Rabobank’s digital environment to receive them. The interviews mention exchanges like this occurring via the platform of bol.com: *“Suppliers making use of bol.com as a platform may need to buy new inventory and require a loan for this. They can apply for this loan based on their transactional data, which we have, directly on the platform of bol.com without needing to use the Rabobank environment. I mean, our company name will be somewhere on that website, but without having to use Rabobank directly they can check whether they can receive this loan. Here you see bol.com handles the distribution of the loans, while they actually take the loan from us”* (interview 1). By exchanging transactional data with an external party, customers can receive products from an external platform they regularly use. This exchange allows for complementarity by offering products on external platforms. Additionally, the aforementioned PSD2 legislation, which states that outside parties can request data on financial transactions via Rabobank’s payment services, allows Rabobank to cooperate with other firms by not having to rely entirely on their own payment infrastructure as this may be outdated compared to the infrastructure of new FinTech firms (Rabobank, n.d.-a). Thereby, data exchange combines Rabobank’s products and services with innovative payment infrastructures from outside parties, increasing complementarity and thereby supporting proposition 2a.

The interviews did not produce evidence for increased lock-in effects through data exchange. Data from the interviews actually suggests the opposite. Through PSD2 regulations, the exchange of data makes it easier for customers to switch from Rabobank to one of its competitors: *“Yes, PSD2 is on the transaction side. So, the Payment Services Directive 2 is a European regulation. It states that customers should be allowed to switch between banks and take all of their data with them. It ensures customers have greater mobility in the financial sector, and the exchange of data helps them with it”* (interview 3). Rabobank does make use of data in order to improve customer experience through feedback, and thereby increase customer value, but the data from the interviews did not suggest that



this increased lock-in effects: *“If we hire a consultant to investigate where in the credit process customers decide to stop, we do share aggregated data. Real anonymised data, so you can never trace it back to customers. But it is mainly for problem-solving and not necessarily for retention”* (interview 5). Overall, it can be concluded that proposition 2b should be revised to state that data exchange negatively affects lock-in.

Data exchange does not seem to be positively related to novelty either. From the interviews it became clear that data is exchanged as a form of cooperation, but no evidence was found indicating data exchange contributes to entirely new processes or transaction methods: *“We definitely make use of data from the market, which we for instance buy or gain through cooperation. But we do not exchange data with a broad array of parties”* (interview 2). Therefore, proposition 2c should be rejected.

### **Digitising Assets**

Data from the interviews suggests that the digitising assets mechanisms is present and recognised within Rabobank. In the interviews, it was mentioned that there are two sides to this mechanism: internally, where Rabobank digitises processes, and externally, where Rabobank digitises services and products for customers (interview 3, interview 5, interview 6). In both instances, there appears to be a positive effect on efficiency.

In the interviews it was mentioned that many firms with operations related to IT, including Rabobank, worked with a waterfall-method: *“In the past we’ve worked with a waterfall method. First we make a design, functional alignment, technical designs, and then we move to implementation. It could take two years before you’re able to present a final product to customer, who might then say that they don’t like it, and then you’ve wasted two years”* (interview 3). This inefficient method of working was replaced by a form of agile working: *“We call it Simplify at Scale. It is a method we work with, in accordance with agile principles. We work in small iterations during a sprint, a two-week cycle, where we create a new piece of functionality for users and they can immediately provide us with feedback”* (interview 3). Because of this agile way of working, digitised processes and work products can be transferred more easily between teams and departments, as well as allow for a more complete oversight of the entire process and a higher degree of generativity (Rabobank, n.d.-b), increasing efficiency: *“Where you used to be able to only see a small part of the process, our people now have insight over the entire chain, the end-to-end process. This allows us to better see which parts could be digitised and automated and maybe automate the entire process”* (interview 2). However, when it comes to communicating where these digitisations are needed, this does not always happen effectively. An internal digital communication platform is available, but not always used in practice:

*“So yes, we’ll put a message on Intranet. But first of all, no one reads it, and second, the people who do read it may not agree with it and refuse to act. So how do you ensure that the communication actually leads to implementation?”* (interview 5).

When it comes to the services and products Rabobank offers its customers, the efficiency resulting from digitisation mostly manifests itself through improved customer journeys and decreased cost-to-serve (interview 5, interview 6). The digitisation of services allows Rabobank to not only improve the customer experience by simplifying and automating their service offering, but also lower costs by requiring less analogue labour in their services: *“So that is something we are currently focussing on quite heavily, automating services and lowering cost-to-serve, but mainly improving the customer experience”* (interview 5).

Based on the above, proposition 3 can be accepted. However, it should be noted that digitisation of assets’ contribution to efficiency is mostly enabled by the design of the internal work process, not communication. This effect was not expected based on the theoretical framework. Externally, the digitisation of assets increases efficiency by automating aspects of the service offering, which removes the need for analogue labour and reduces costs. So overall, digitisation of asset positively affects efficiency.

### **Knowledge acquisition**

From the interviews it could be derived that the knowledge acquisition mechanism is recognised by Rabobank, and that substantial attention is paid to it (Rabobank, n.d.-c). On the corporate level, Rabobank has teams working on open innovation, purely focused on innovations of other large firms and smaller start-ups in the external environment (interview 1). For employees, there is also opportunity for personal development related to their own work: *“Yes, we certainly have a lot of options for that. For instance, a yearly budget we can use for any training we want, and not necessarily related to the financial sector. And if I would want some more strategic training related to my personal work, I can also make a request for that”* (interview 6).

According to the data from the interviews, product augmentation is positively affected by knowledge acquisition. Rabobank has a large number of employees focused on innovation and capturing knowledge from outside parties. One of their main goals is to improve the bank’s product and service offering by looking at digital technologies in the external environment that can provide augmentations: *“We have a lot of teams working on innovation and digitalisation. They look to gain new knowledge to update our processes. But most importantly, they look for ways by which we can service our customers faster, simplify our IT-landscape, and create more functional versions of our digital products”* (interview 2). Therefore, proposition 4a can be accepted.

Data exchange appears to be affected by knowledge acquisition to some degree. The interviews have shown that Rabobank is actively acquiring knowledge regarding the storing and, where regulation allows, automated transfer of data. One example of this mentioned in the interviews is ChatGPT: *“ChatGPT for instance is something that can make our work a lot easier. But it can also be quite dangerous if you use it to share customer data. That data would be somewhere on the cloud of ChatGPT. So, on the one hand we are very interested in what is happening there. On the other hand, the higher-ups are always saying that we need to be careful with these kinds of technology. You never know where that data may end up”* (interview 5). So, Rabobank is gathering knowledge on different and more efficient means of transferring data, which could improve the process of data exchange. This serves as sufficient grounds to accept proposition 4b. However, no evidence was found that suggested that knowledge acquisition increases the number of exchanges or the amount of data exchanged.

Digitisation of assets is positively affected by knowledge acquisition. The interviews have shown that by maintaining relations with software suppliers and engaging in partnerships with other firms, Rabobank gains new insights with regard to the digital architecture of external parties, and thereby the degree to which other firms’ products, processes and services are digitised. These insights are then used to further digitise and improve Rabobank’s own assets: *“So what we do in architecture, is continuously talk with software suppliers. Not necessarily because we want to buy new software, but because we are interested in their ideas. And it is always fun to talk with other parties who think different from you. So, you learn that another company may work entirely different from yours and that is interesting to understand. And if we work with a particular partner that has different ideas than us, we can get a lot of information from them and we can use that for our own architecture, our own digital processes and services”* (interview 3). This shows that proposition 4c can be accepted.

## Conclusion

The objective of this research is to gain insight into how a digital orientation contributes to successfully creating value. The research question that was formulated in order to achieve this objective is: *How does a digital orientation influence value creation for Dutch banks?* In the following section, the main findings of this research are summarized and based on the propositions that resulted from the theoretical framework, an answer to the research question is formulated.

The results of this research have shown that each mechanism of a digital orientation affects at least one of the sources of digitally enabled value creation. Thereby, this research has expanded the conceptualisation of the concept “digital orientation”. The majority of the propositions posed in the theoretical framework could be accepted based on the results. With regards to these propositions, a number of things do stand out. First, regarding the data exchange mechanism, proposition 2b has to be revised to show a negative effect. Based on the theory, data exchange was expected to positively affect lock-in by strengthening connections with partners. Instead, it showed a decreased lock-in of customers due to regulations in the financial service sector. Second, data exchange was expected to positively affect novelty. However, no evidence could be found to support this, meaning proposition 2c was rejected. Third, digitising assets did affect efficiency positively, as proposition 3 stated, but the cause for this was not found in communication but rather in work process design. This was not expected based on the theoretical framework.

The results have shown that augmenting products, data exchange, and digitising assets each have positive effects on at least one source of value creation. The results also indicate that knowledge acquisition has a positive effect on all three of the other mechanisms, and thereby has an indirect positive effect on value creation as well. Therefore, it can be concluded that a digital orientation for Dutch banks positively influences value creation through product augmentation, data exchange, digitising assets, and knowledge acquisition

## Discussion

The final section of this research report discusses the theoretical and practical implications of the results found in this research. Additionally, a critical reflection on this research and its limitations is provided, as well as recommendations for future research directions.

### Theoretical implications

This research has provided a number of implications regarding the research of digital orientations. First, the results of this research have expanded further on the conceptualisation of digital orientations, which is limited to only the dimensions, and therefore the strategic aspects regarding the use of digital technology in organisations (Kindermann et al., 2015). This study has identified the mechanisms through which these dimensions are manifested in practice, and provided insights on how they influence specific sources of value creation. Second, by considering value creation as the independent variable, this research has offered insights that are different from existing literature, where the effects of digital orientations were considered in terms of firms' financial performance (Quinton et al., 2018; Nasiri et al., 2022). By researching value creation as the independent variable, this research has expanded the view on the effects of digital orientations to value creation for the firm, its partners, and its customers. By considering value creation as the independent variable, this research has taken account of increases in non-financial gains as a consequence of digital orientations as well. Third, existing literature has shown that the effects of the dimensions of digital orientations on organisational performance are purely positive (Kindermann et al., 2015; Arias-Pérez & Vélez-Jaramillo, 2022). By taking an in-depth view of the mechanisms of digital orientations, this research has shown that this is not the case when considering the effects on value creation, as data exchange was found to have a negative effect on lock-in and no effect on novelty.

### Practical implications

This research offers multiple insights for practitioners aiming to gain value from digital technology. First, by offering a clear conceptualisation of digital orientations with dimensions and corresponding mechanisms, this research provides a concrete outline of the different organisational aspects that have to be transformed in order to move closer to a digital orientation. Second, the results of this research have shown that Dutch banks attempting to move their organisation towards a digital orientation must integrate every single mechanism into the organisation in order to prevent missing out on opportunities for value creation, as each of the mechanisms affects the drivers of value creation. It thereby warns practitioners against only engaging in digital transformation efforts in certain organisational domains. Third, by clearly indicating that digital orientations are a form of strategic

orientations, this research indicates to practitioners that in order to move towards a digital orientation, value propositions have to be adjusted in order to fit with the mechanisms of a digital orientation. It shows that adopting a digital orientation is not achieved by acquiring a number of digital technologies, but is initiated by a process of strategy development.

### **Limitations**

There are a number of limitations to this research. First, the setting of this research may impact the generalisability of the results. This research was conducted within the Dutch financial service sector, which is heavily influenced by the impact of digital technology (Rabobank, 2023), but the effects may differ across industries and countries. Second, the limited base of existing literature surrounding the concept of digital orientations may mean that dimensions or mechanisms of this concept exist that may not have been identified yet and are therefore not included in this research. Third, as mentioned before there are many different types of strategic orientations. This research focuses purely on one specific type of strategic orientation, meaning that interactions between different strategic orientations that may be present within the subject organisation, and their effect on value creation, were not included in this research.

### **Future research**

The results of this study provide a basis for several future research directions. First, this research was conducted in a qualitative way. It suggests that the mechanisms of digital orientations affect value creation. Future research could be dedicated to quantifying the effect strength of these different mechanisms. Second, as mentioned under the limitations section, this research does not take account of possible interaction effects of different strategic orientations. As the interaction between different strategic orientations is not an uncommon phenomenon (Schweiger et al., 2019), future research could be conducted on the interaction between digital orientations and other strategic orientations in relation to value creation. Third, this research was conducted as a single case study. When using the same research design in a multiple case study, the comparison between different organisations may allow for the identification of potential moderating variables in the relationships between the mechanisms of digital orientations and value creation. Future research could be conducted to investigate this.

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## Appendix A – Interview Protocol

Start the interview with a short introduction of both interviewer and respondent. Ask questions like:

- What is your name?
- What is your function within Rabobank?
- For how long have you been employed at Rabobank?
- Have you always performed your current function within Rabobank?

Continue with formalities: mention that personal information such as name and function will not be mentioned in the final report; function will only be mentioned in the appendices, which will only be read by the project supervisor and second examiner. Ask if the respondent objects to recording the interview. If the respondent is hesitant to accept this, mention that it will allow for a more accurate transcript of the interview and will prevent mistakes from being made in the analysis phase of this research. Explain that the recordings will be deleted as soon as they are transcribed. After formalities are rounded off, proceed with the interview questions:

### Questions on value creation

#### Efficiency

Definitie van efficiency geven.

- Definitie van efficiency uit de literatuur: efficiency betekent niet alleen het reduceren van kosten en vergroten van winst, maar houdt ook in dat de performance vanuit het werkproces verbeterd wordt, inclusief de elementen die geen directe relatie hebben met winst (denk aan gebruik van resources, verbeteren van werkomstandigheden en vergroten van klanttevredenheid).

Speelt efficiency een grote rol binnen het werkproces bij Rabo?

*Information asymmetry:* In hoeverre wordt het werkproces beïnvloed door communicatie? Is er sprake van informatie asymmetrie tussen afdelingen of binnen de hiërarchie?

*Communication speed:* Beïnvloed dit de snelheid van communicatie binnen de bank?

*Transaction speed:* Hoe zit dit met communicatie naar buiten, met bijvoorbeeld externe partners of klanten?

## **Complementarity**

*Combination of digital and analogue assets:* Wordt er binnen Rabo alleen nog digitaal gewerkt, of zijn er ook nog 'analoge' processen, of combinaties hiervan? En hoe zit dit met diensten die je klanten aanbiedt?

*Technology links with partners:* Als het gaat over de processen en diensten die Rabo aanbiedt, wordt hierbij nauw samengewerkt met externe partners (bijv. gebruik maken van zelfde platforms/infrastructuur)?

## **Lock-in**

*Product/service customization:* Zijn klanten bij Rabo in staat om zelf aanpassingen te maken aan bepaalde diensten waar zij gebruik van maken?

*Loyalty programmes:* Zijn er bij Rabo middelen die gebruikt worden om klanten/partners langer te binden?

## **Novelty**

*Continuous improvement:* In hoeverre is er sprake van continue verbetering van producten/diensten?

*Integration of information flows:* In hoeverre wordt kennis/technieken van buitenaf daadwerkelijk geïntegreerd in aanbod en werkprocessen van Rabo?

## **Questions on D.O.**

Definitie digital orientation geven:

Het strategisch positioneren van een bedrijven om gebruik te maken van de kansen die (nieuwe) digitale technologie kan bieden; het opvangen, transformeren, en toepassen van kennis om waarde te creëren uit digitale technologie.

- In hoeverre is dat bij Rabo aan de orde?

*Augmenting products:* Worden producten van Rabo aangepast om meer waarde te creëren voor klanten (up-to-date, location independent) en voor de bank (genereren van data)?

*Knowledge acquisition:* In hoeverre wordt vergaren van nieuwe kennis aangemoedigd/gefaciliteerd binnen jullie organisatie? Wordt bij het aannemen van nieuwe medewerkers gelet op kennis over nieuwe technologieën/services?

*Data exchange:* Wordt er veel samengewerkt met externe partners voor ontwikkelen van nieuwe processen/diensten? Is er veel uitwisseling van informatie en wordt dit geïntegreerd in jullie eigen organisatie? Worden bepaalde processen/diensten die jullie hebben aangeboden aan jullie partners? Zijn er bepaalde criteria die hiervoor gehanteerd worden (nieuwste van het nieuwste, moet het complementair zijn? Etc.)

*Digitising assets:* In hoeverre worden processen of services geautomatiseerd? Wordt werk hier efficiënter door of juist meer ingewikkeld? In hoeverre wordt dit gefaciliteerd/verhindert door organisatiestructuur?

Afsluitende vraag: Er kan gesteld worden dat via het proces van digitalisatie, Rabobank aan het transformeren is van een traditionele bank naar een IT-bedrijf met een banklicentie. Bent u het eens met deze uitspraak? Denkt u dat dit een bewuste transformatie is, of meer een gevolg van ontwikkelingen om de bank heen?