



SCHOOL OF
ECONOMICS AND
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**Humans as enablers of digital transformation of retailers:
The design system SKAPA and its users as capabilities for
IKEAs digital transformation**

by

Nina Lotz & Lauriane Martine Jambu

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Supervisors: Patrik Stoopendahl & Ulf Johansson

Examiner: Ulf Elg

Abstract

This thesis aims to explore how a design system can serve as a resource for digital transformation within the retail industry, by drawing from the dynamic capabilities approach and the digital maturity framework by Pinto et al. (2023). Connected to this, it is looking specifically at the adoption of design systems and investigates how humans can act as enablers of digital transformation.

To do so, a single case study of the multinational retailer IKEA and its design system SKAPA was conducted. Through qualitative interviews with managers and designers based in Sweden, China, and the US insights about IKEA's digital transformation and SKAPA were gathered.

The findings drawn from this research identified that design systems are a strong capability that is interrelated with an organization's other resources, allowing the retailer to better face the challenges of digital transformation in a fast-paced and competitive retail environment. A design system can empower co-workers at retail companies such as IKEA, while simultaneously strengthen the brand and break down silos across the organization. Furthermore, the findings revealed that the adoption of a design system is not only impacted by a company's digital culture, technology, and strategy but most importantly by its people such as designers and leadership/management which directly use and manage such systems and implement a company's culture and strategy. The community aspect around a design system which is also human related was identified as a new capability tied to the social element to digital transformation. This underlines that humans ultimately impact the company's digital maturity and ability to undergo digital transformation.

Overall, this thesis adds to the academic understanding of design system, adoption research and literature on digital transformation of the retail industry.

Keywords: digital transformation, retail industry, design system, dynamic capabilities, digital maturity, adoption, human factors

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1.Introduction

1.1 Background

Today's retail environment is characterized by rapid and continuous technological development. New digital technologies lead to new consumer behavior and change the competitive landscape which disrupts the market (Vial, 2019). Digitalization is the implementation of these new digital technologies and has been identified as one of the main causes for retail sector transformation (Jocevski et al., 2019). It's up to retailers to devise ways to stay competitive as digitalization can both present opportunities but also existential threats (Vial, 2019). Digitalization impacts not only the way that retailers conduct business, but also how they create, and maintain relationships with consumers, suppliers, employees, and other stakeholders (Jocevski et al., 2019; Pinto et al. 2023). For example, digitalization changes the nature of interactions between customers and retailers as new types of exchange places emerge (Hagberg et al. 2016). This pushes retailers to digitally transform to keep interacting with customers through various new digital touchpoints. Nambisan et al. characterize 'digital transformation' as "the creation of, and consequent change in, market offerings, business processes, or models that result from the use of digital technology" (2017, p.224).

With the increasing number of possible touchpoints, comes the need to develop omnichannel retailing in aim to integrate various channels into a single, unified, seamless customer experience (Rigby, 2011). Many retailers struggle to successfully implement an omnichannel strategy due to its complexity (Jocevski et al., 2019). One of these challenges includes the need for a shared, consistent design language across all channels (Sirur, 2022; Grewal, 2019). In an effort to tackle this particular challenge and increase a brand's consistency across different digital channels, companies like Google, IBM, Starbucks and IKEA have recently implemented design systems into their activities (Weber, 2022).

A design system is a collection of reusable components and patterns that can be assembled to build digital applications. Examples of such components include dropdown menus, buttons, icons, text fields or logos. Each component in a design system meets a specific interaction or user interaction need, and has been created to work together as building blocks to provide intuitive user experiences (Fessenden, 2021).

Guided by a complete set of standards a design system is intended to manage design at scale and provide streamlined UX guidelines, thereby preventing inconsistencies (Fessenden, 2021). With brand touchpoints reaching over multiple channels and platforms, leveraging a central design language allows to create a consistent user experience (Fessenden, 2021). One company that recently implemented their own design system is IKEA. Their design system called "SKAPA" provides a framework for the retailer's digital products, drawing from IKEA brand frameworks and visual identity (IKEA, 2023). However, although Design systems have gained popularity in practical settings, they remain a largely under-explored area in academic circles. They have neither been fully defined, nor has their adoption and their effect on coworkers and companies' digital transformation been addressed. Therefore, we aim to explore design systems in connection with the digital transformation of the retail industry.

1.2 Design systems in the context of digital transformation

Within the phenomenon of digital transformation, design systems contribute to the creation of new market offerings by standardizing aspects of the design process and brand expression but to do so certain internal business processes have to be altered. By creating external visual consistency across channels to contribute to omnichannel retailing, design systems have to generate a shared baseline of information to develop a unified language within and between cross functional teams inside an organization (Fessenden, 2021). This unified language aims to help break functional silos and fosters more collaboration internally. Indeed, cross-functional collaboration has been identified as an important factor of a digital transformation (Vial, 2019). Solem, Fredriksen & Sørebo (2023) argue that “to integrate channels more systematically, collaboration should be encouraged, as it would prevent departmental silos” (p. 28). Therefore, a design system is also closely linked to an information system which is adopted to optimize the design and development process of digital products, and to increase internal collaboration and the flow of knowledge and information. Furthermore, a design system can serve as an educational tool and reference for new or less experienced employees, which is closely tied to knowledge management within an organization (Fessenden, 2021). What we can draw from this is that digitalization of internal processes is the first step towards the digitalization of market offerings for the end-consumer.

Taking an internal perspective to digital transformation, the users of such design systems become important. People that can be considered as users of a design system, are designers, developers, as well as product owners. They utilize the data they receive to build new digital products, contributing to a larger data set and sharing of knowledge (Fessenden, 2021). As Diana Mounter, the design systems manager at GitHub states: “Design systems are always evolving, and the way you share and encourage adoption of new iterations will evolve along the way as well.” (Fessenden, 2021).

Apart from the direct users, the governance of a of design system is a crucial aspect to consider. In his blog for the user experience agency nomensa, the UX Designer Owen Lord suggests having a cross-disciplinary governance team consisting of product owners, designers, developers and brand guardians. He states that it would be their responsibility to enable teams to access to the design system, while ensuring that they understand its value. As potential activities he suggests scheduling regular meetings in order to openly discuss new requirements and improvements to existing elements, such as brand or design patterns (Lord, n.d.).

1.3 Humans as enablers of digital transformation

As seen in the previous section, digital transformation is not only about new digital technologies but most importantly about employees working with the new technology. When an organization undergoes a transformation such as a digital transformation, the transformation usually starts internally (with employees) so that in the end it can be transferred externally (to consumers) (Roper & Roper, 2012; Pinto et al. 2023). Therefore, the environment users of new technologies work in, involving an organization’s identity, culture and structure, can be a point

of departure for managing a digital transformation (Roper & Roper, 2012); (Pinto et al. 2023); (Vial, 2019).

From a manager's point of view, digital transformation holds a lot of potential but also poses a broad variety of challenges, as it requires to change habits and ways of working (Ellström et al. 2022). Digital transformation requires a fundamental change in the organization's underlying mindset, systems, and tools to reposition parts of, or the entire, organization (Gupta, 2018). Indeed, the usage of new technologies inside an organization require new skills in different domains, including data analytics skills and collaborative skills (Aimé et al. 2022). Schwertner (2017) identifies human factors such as employee's resistance to change, as a main difficulty regarding digital transformation.

In summary, we suggest that digital technologies alone deliver little value to a retailer. It is their usage within a specific context that leads to new forms of value-creation (Vial, 2019); (Pinto et al. 2023). This is why this thesis will take an internal organizational perspective, exploring how humans can act as true enablers of digital transformation.

1.4 Problematization, purpose and contribution

Research Problems

In the context of retailer's digital transformation, specifically omnichannel retailing was identified as a growing trend to address changing customer needs (Jocovski et al., 2019). A design system becomes crucial to implement today as it can contribute to omnichannel retailing by providing a more consistent user experience on digital channels and therefore has the potential to offer a competitive advantage (Fessenden, 2021). However, design systems remain under-explored in academia, especially in context of retail and digital transformation. Most digital transformation studies so far have focused on the industrial and manufacturing fields, while little attention was given to digital transformation within retail (Mugge et al. 2020). Although many big companies have started implementing design systems, and industrial practitioners have discussed their experiences and knowledge of design systems on websites and in blog posts, academic studies have only recently started to discuss the design system practice (Lamine & Cheng, 2022). When conducting a broad review of literature on design system, both by academics and practitioners, Lamine & Cheng (2022) identify only two peer-reviewed studies in this area (Vendramini et al. 2021; Handal et al. 2022), concluding that there is still a lack of consensus on the concept of design systems. While the whole concept of design systems remains under-researched, there have been no significant advances to define design systems from a strategic point of view, nor have they been connected to digital transformation or information systems, especially not in the retail industry.

This leads to the second gap that this thesis is aiming to address. Overall, there is a need to better manage and understand digital transformation, specifically within retail (Mugge et al. 2020). The first step in managing a digital transformation is to achieve the adoption of new digital tools and technologies, which is crucial for a retailer to become digitally mature (Roper & Roper, 2012; Pinto et al. 2023). The adoption of new technology such as information systems

has been studied by several researchers, identifying human, technological, and organizational factors impacting adoption. (Seran et al. 2022; Youssef et al. 2022; Nguyen et al. 2022; Lutfi et al. 2023). However, research surrounding adoption has never directly been applied to design systems before. Although there are similarities to information systems, the characteristics of a design system within the retail industry are distinct and therefore require their own consideration within adoption research. Within the topic of adoption, direct users of new technologies and digital tools become important. While studies have identified and talked about human factors as barriers or enablers of adoption of technologies and digital transformation (Vial, 2019; Pinto et al. 2023), this has not been related to design systems.

Research questions

We propose the following research questions:

Main research question	How can a design system like SKAPA contribute to IKEA’s digital transformation?
Sub-research questions	What role can a design system’s stakeholders, such as managers and designers, play for the digital transformation of IKEA?

Table 1: Research Questions

The research is conducted based on IKEA’s design system SKAPA, which will serve as a single case study of a multi-national retail company implementing a design system throughout the course of this thesis. Drawing from the dynamic capabilities approach, we aim to explore how a design system can serve as a resource for digital transformation and how connected to this, humans can act as enablers of digital transformation within the retail industry. The dynamic capabilities approach has previously been applied to identify organizational resources required for realizing omnichannel retailing (Solem et al. 2023). Therefore, it provides a sufficient lense for assessing the resources required for digital transformation of retailing. Furthermore, using the digital maturity framework (Pinto 2023), which is based within dynamic capabilities approach, allows to gain insights about the adoption and application of digital technologies, considering both human and strategic factors. When conducting the research for this thesis, both the strategic view of managers, as well as the perspective of users of the design system will be taken into consideration. Utilizing this specific framework, we will use the dynamic capabilities theory to identify necessary capabilities for managers and designers to better integrate and adopt a design system within an organization.

Research Purpose & contribution

Overall, it is the purpose of our research to get an understanding of how a design system can contribute to a retailer’s digital transformation and what role a design system’s adoption plays in a retailer’s digital maturity. We aim to qualitatively explore what role humans (employees) play within a retailer’s digital transformation, specifically their perceptions towards using and managing design systems. Therefore, we must investigate designers’ and managers’ (the main stakeholders of a design system) perceptions and experiences. In doing so, the research is also

taking the culture and leadership of a company into consideration, relating design systems to digital maturity.

Ultimately, this study aims to contribute to the understanding of the role that humans can play as potential enablers of digital transformation, specifically in relation to design systems. Linked to managing a digital transformation, this study also aims to explore how managers can aid the adoption of design systems. Therefore, this thesis adds to existing literature on the role of humans within digital transformation within the retail industry, as well as adoption of new technologies (Yusof et al. 2007).

2. Literature Review

This chapter starts off by taking a broader external perspective to digital transformation in the retail industry (2.1), which shows how various new digital technologies influence the environment retailers must compete in today, and how consumer trends drive most of these changes (2.1.1).

As mentioned in the introduction, we focus on one particular digital technology (design systems) within a digital transformation to focus on in this thesis. A design system contributes to omnichannel retailing, which is why this chapter also contains a subchapter about omnichannel retailing and how/why it is important within a retailer's digital transformation, and how it is linked to design systems (2.1.2).

As this thesis aims to investigate how design systems can be a capability for the digital transformation of retail, the following chapter will focus on design systems (2.2). Since a design system is related to the concept of information systems and holds knowledge about design, identity, and processes, the literature will also cover information systems (2.2.1) and knowledge management (2.2.2). In this context, looking at the adoption of new technologies, and specifically information systems, provides insights into the adoption of design systems.

We suggest that digital technologies alone deliver little value to a retailer. It is their usage within a specific context that leads to new forms of value-creation (Vial, 2019); (Pinto et al. 2023). This is why this thesis's main focus is on the internal organizational perspective, exploring how humans can act as true enablers of digital transformation. Consequently, in chapter 2.2.3, we shift to an internal perspective to digital transformation. The goal of retailers going through a digital transformation is to ultimately become digitally mature. Digital maturity can be measured through the adoption of new digital technologies within an organization (Pinto et al. 2023). Digital transformation is therefore not only about new technologies but most importantly about employees working with the new technology.

2.1 Digital transformation of retail

When faced with new digital technologies a retailer must go through several processes before achieving a digital transformation. First, organizations will have to go through business digitization which is a "company's ability to create value through process optimization and adoption of digital technologies" (Pinto et al. 2023, p.3). This is followed by digitalization which "is the proliferation and application of [these] digital technologies" (Pinto et al. 2023, p.3). The phenomenon emerging out of digitization and digitalization is digital transformation which is "the creation of, and consequent change in, market offerings, business processes, or models that result from the use of digital technology" (Mugge et al. 2020, p.27).

Indeed, Grewal et al. argue that only innovative retailers can offer consumers value (2019). Retailers create value for consumers by providing the right product assortments, through the right transaction channels and at the right time through good logistics of merchandise (Reinartz, Wiegand & Imschloss, 2019); (Grewal et al. 2019). However, Mugge et al. (2019) argue that

“digital transformation represents a significant change in the basic pattern of how organizations create value” (p.27). So, the nature of these retailing functions changes with new emerging digital technologies and must be adapted through digital transformation.

2.1.1 Transformation of the retail value-creation process

Currently, new digital technologies include AI, VR, hyper-connectivity, big data, mobile, cloud or the internet of things (IoT) technologies which can be used within retail in to improve streamline operations or customer experience, and develop new business models (Warner & Wäger, 2019); (Pinto et al. 2023). For example, IoT is defined as the “technological components that enable a product or production machine to connect to a corporate network and to collect and/or share data” (Nagy et al. 2018, p.8). This technology led to cashier-less payment systems, personalized retail marketing, inventory management tools or wireless shipment tracking devices. Consequently, using these new digital tools within retail functions leads to a surge of available customer data such as the accumulating purchase history, location and preferences data or demographic history, which can be used as a competitive advantage when collected and analyzed (Hänninen, Smedlund & Mitronen, 2018). Moreover, IoT also changes economic transactions with consumers. Retailers are no longer the primary touchpoint for making a retail transaction as many transactions become automated. Another example of digital tools used to increase retailer’s value creation process are sales configurators which enable to link marketing and customer demand information to better customize a product to individual customer needs (Mahlamäki et al. 2020). Through digitalization retailers shift away from the traditional supply chain led perspective of retailing where costumers are treated as a mass (Hänninen, Smedlund & Mitronen, 2018). Also, mobile technology led to the emergence of contactless technologies such as QR codes which can be integrated in the point of sale (POS) to improve services (Savastano et al. 2019). Furthermore, simple sales tactics such as “order taking” or “explaining” become outdated and are replaced by e-commerce or marketing automation (Mahlamäki et al. 2020). Also, in-store technologies can also be used to improve customer experiences at the POS. These include interactive touchscreens, virtual fitting rooms/mirrors or AR (Savastano et al. 2019).

Moreover, new retail formats emerge such as multi-sided digital platforms like Amazon, which allow direct interaction between suppliers and consumers, changing the nature of exchange in retail (Hänninen, Smedlund & Mitronen, 2018). They provide added value to consumers with broader product assortments on one single platform (Hänninen, Smedlund & Mitronen, 2018). Digitalization of retailer’s functions also changes the competitive landscape. Traditionally, retailers have competed on prices, locations and selections; However, with increasing digitalization of retailing functions ancillary services and the creation of concepts become a competitive advantage as they are more cost-efficient and hold greater value in customer’s eyes (Hänninen, Smedlund & Mitronen, 2018).

Overall, these new technological tools enable retailers to create more value by attracting new shoppers and retaining existing customers which increases revenue, but also by acquiring larger consumers’ surplus and reducing costs through transferring labor to shoppers (Savastano et al.

2019). From an organizational perspective, digital transformation within retail creates value through increased automation, individualization, ambient embeddedness, interaction and transparency & control (Reinartz, Wiegand & Imschloss, 2019).

On the other hand, for consumers, new business models emerging from digital transformation better satisfy customers' hedonistic needs through new forms of digital consumer experiences, consumer-to-firm engagement, and consumer value (Hänninen, Smedlund & Mitronen, 2018). Overall, consumers get better value from the digitalization of retail functions through increased convenience, relevance, experience, empowerment, and savings (Reinartz, Wiegand & Imschloss, 2019).

2.1.2. Omnichannel retailing

Through digitalisation of retailer's functions, channel formats have changed, and customers now interact with retailers through a broader variety of different touchpoints. On one hand, retailers get to offer consumers more value as customers have more choices to buy what, where, when, and how they want it (Herhausen et al. 2015). However, digitalisation of retailer's value-creation process also comes with challenges such as more complex customer journeys, faster media and channel fragmentation processes (Savastano et al. 2019); (Herhausen et al. 2015). Consequently, creating coherent branding across these variety of fragmented channels becomes more difficult. As a result of these challenges concepts such as multichannel or omnichannel retailing have emerged (Hänninen, Smedlund & Mitronen, 2018). Multichannel retailing enables marketers to manage the distribution of products or services on multiple channels (Ailawadi & Farris, 2017). Multichannel is referred to as "the design, deployment, coordination, and evaluation of the different channels through which the marketer acquires, retains, and develops customers" (Ailawadi & Farris, 2017, p.120). One example being that products and services now must be available on both the retailer's website and the store.

However, with the emergence of new digital channels also comes the need to integrate both digital and physical channels for a better customer experience (Herhausen et al. 2015). This process is also referred to as online-offline channel integration (OI) (Herhausen et al. 2015). To achieve this, omnichannel retailing is applied. Omnichannel retailing is an evolution of multichannel retailing and takes one step further by also considering customer's needs, giving importance to channels of communication to meet and interact with customers where they want to shop (Savastano et al. 2019 ; Ailawadi & Farris, 2017). In fact, omnichannel retailing employs "multiple channels and is focused on integrating activities within and across channels to correspond to how consumers shop" (Ailawadi & Farris, 2017, p.120).

So, omnichannel retailing uses technology to link and integrate both online and physical channels into a single, unified, seamless experience (Rigby, 2011). Therefore omnichannel retailing focuses on optimizing and managing the performance of each channel. The goal in omnichannel retailing is to manage channels together so that the interaction perceived by consumers is not with the separate channels but with the brand (Savastano et al. 2019). This is where a design system comes in handy, as it provides a consistent design language across all channels, creating a consistent user experience (Fessenden, 2021).

2.2 Design systems

The specific technology, that is of interest for this thesis, are design systems. As mentioned before, the potential of design systems has been recognized in practical settings but remains largely under-explored by academia. After completing a thorough analysis of the literature on the subject written by academics and practitioners Lamine and Cheng (2022) found that there is still a lack of consensus on the idea of design systems, identifying only two peer-reviewed publications systems (Vendramini et al. 2021; Handal et al. 2022). Vendramini et al. (2021) find that literature discussing design systems usually attribute them three key elements: component libraries, design guidelines, and style guides. Handal et al. (2022) conduct a case study, focusing on the adoption of a design system. Stating that design systems are still relatively new and their adoption across organizations is still at its early stages, they discuss the Atomic Design framework by Frost (2016) as the theoretical foundation for design systems. (Handal et al. 2022). According to Frost (2016) a design system is made up out of several building blocks, namely the brand identity, design language, code style guides, patterns, and lastly voice, tone and writing. When discussing the reasons for implementing such a system, he refers to the characteristics of a style guide, specifically consistency, shared vocabulary, education, speed and testing (Frost 2016).

People that can be considered as users of a design system, are designers, developers, as well as product owners. They utilize the data they receive to build new digital products, contributing to a larger data set and sharing of knowledge (Fessenden, 2021). As Diana Mounter, the design systems manager at GitHub states: “Design systems are always evolving, and the way you share and encourage adoption of new iterations will evolve along the way as well.” (Fessenden, 2021). This is in line with the notion that information systems are evolving entities, that adapt to the organizations environment and its users.

Apart from the direct users, the governance of a of design system is a crucial aspect to consider. In his blog for the user experience agency nomensa, the UX Designer Owen Lord suggests having a cross-disciplinary governance team consisting of product owners, designers, developers and brand guardians. He states that it would be their responsibility to enable teams to access to the design system, while ensuring that they understand its value. As potential activities he suggests scheduling regular meetings in order to openly discuss new requirements and improvements to existing elements, such as brand or design patterns (Lord, n.d.). Furthermore, Fessenden (2021) highlights that a design system can serve as an educational tool and reference for new or less experienced employees, which is closely tied to knowledge management within an organization.

One central component to a design system is its design repository, which can take different forms, but often contains a style guide, a component library, and a pattern library. The repository allows for data, specifically the different components, as well as information and knowledge about design to be stored, shared and accessed throughout the company. And indeed, a design system overall exhibits similar characteristics as an information system. As Davidsson & Hennings (2020) highlight: “The elements of a design system are connected

through a constant exchange of information and material” (p.11). In generating a shared baseline of information, design systems aim to create a unified language within and between cross functional teams, which aids creating visual consistency across products, channels, and potentially siloed departments (Fessenden, 2021). Therefore, a design system can be viewed as a type of information system that is adopted to optimize the design and development process of digital products, increase internal collaboration and the flow of knowledge and information within an organization.

2.2.1 Information systems

An information system is an” integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products.” (Zwass, 2022). They are combinations of hardware, software, and telecommunications networks that organizations use to support decision making, coordination, control, analysis, and visualization (Valacich & Schneider, 2010).

Information systems are enabling optimized and increasingly agile information flows throughout the organization (Kumar, 2021). Sharing digital information can improve organizational effectiveness, ultimately aiding companies to realize their digital business strategies (Mathrani et al. 2012). A properly constructed information system is built upon a coherent foundation that facilitates the ability to undergo responsive change, adapting to new business or administrative endeavors and thereby enabling organizational agility. They provide support for business operations and enable or enhance essential organizational capabilities (Zwass, 2022). Connecting information systems to the idea of boundary objects, Seran et al (2020) suggest the adoption of information to bridge the gaps of understanding and aligning multiple, often competing, interests within a company. As Boundary objects, information systems facilitate communication, cooperation between different professional communities with diverse expertise, concerns, and backgrounds. In doing so they transform knowledge and enable productive collaboration across teams (Carlile, 2002).

To ensure a successful implementation of an information system within an organization, the employees need to sufficiently adopt, learn and use the information system (Bourgeois et al. 2019). Youssef et al. (2022) agrees that the users of information systems are extremely important for its success, while also highlighting the role of the people who work to create, administer, and manage information systems.

2.2.2 Knowledge Management

Knowledge Management is a vital part of digital transformation and refers to the practice of optimizing knowledge flows within an organization. Digital transformation requires engagement, interactions, and the exchange of ideas, therefore, by developing knowledge management strategies organizations can actively support digital transformation processes (Kumar, 2021). Knowledge management involves the efficient handling of information and resources internally and stretches from acquiring knowledge to the integration of learning

processes into practices (Kumar, 2021). These characteristics can be seen in both information and design system. Additionally, they can be connected to internal communication, which Welch & Jackson (2007) define as “the strategic management of interactions and relationships between stakeholders at all levels within organizations” (p.183).

Almeida et al. (2018) discuss the need for tools of internal communication, which could be utilized as a form of knowledge management system. An aggregation of customized practices would allow to accelerate co-workers’ integration and engagement by giving them the opportunity to learn about the specific activities and tasks of their jobs and how to put them into practice (Almeida et al. 2018). Overall, research within the field of information systems agree that - if managed effectively - these knowledge management systems and internal communication have the power to engage employees and drive companies to create value (Almeida et al. 2018).

2.2.3 Design systems providing information and knowledge

Overall, information and knowledge, and their effective flow and usage across the different parts of an organizations are important resources and capabilities for a company. As a design system holds information and knowledge about design, common practices as well as a company's visual identity, it can contribute to these information- and knowledge sharing processes. However, digital transformation is not only about new technologies but also about the people working with them. Therefore, the next chapter will focus on humans as enablers of digital transformation, and the adoption of new technologies.

2.3. Humans as enablers of digital transformation

In general, when an organization undergoes change on a strategic level such as a digital transformation, change usually starts internally (with employees) so that in the end it can be transferred externally (to consumers) (Roper & Roper, 2012; Pinto et al. 2023). Pino et al. link digital transformation to digital maturity which serves as a metric to measure the extent to which an organization digitally transformed (2023). Digital maturity is defined as “the extent to which learned ability adapts to ongoing digital changes and digital transformation” (Pinto et al. 2023, p.4). Indeed, it reflects the degree of implementation and adoption of digital technology in retail business models (Pinto et al. 2023). Consequently, digital maturity “comprises not only implementation of digital technologies, but adoption of a digital culture and the ability to assess and integrate the entire organization with digitally enhanced improvements” (Pinto et al. 2023, p.4). More specifically, to become digitally mature a retailer must incorporate the entire organization, including its employees, processes and communications. Although digital transformation is driven by technology, it is not “a mere technological phenomenon but has fundamental economic and societal consequences that can be seen in many aspects of our professional and private lives” (Teubner & Stockhinger, 2020, p.1).Consequently, digital transformation is not only about new technologies but most

importantly about the people working with the new technology. So, employees who directly use new digital technologies are an important element contributing to digital transformation.

2.3.1. Organization's culture, structure and processes

The environment direct users of digital technologies work in, including an organization's culture, structure, and processes can be a point of departure for enabling digital transformation (Roper & Roper, 2012); (Pinto et al. 2023). Vial supports this statement and argues that digital transformation is not only about implementing new technologies but that "strategy as well as changes to an organization, including its structure, processes, and culture are required to yield the capability to generate new paths for value creation" (2019, p.118). For example, within organizational structure, cross-functional collaboration is an important element contributing to digital transformation (Solem et al. 2023). However, strict functional silos deeply embedded in for instance a retailer's organizational structure can stand in the way of collaboration and must be changed accordingly (Vial, 2019). Furthermore, an organization's culture and values must reflect a willingness to take risks and to experiment to allow for digital transformation (Pinto et al. 2023; Vial, 2019). Consequently, new leadership roles aligning with an innovative culture will be needed to foster a digital mindset to the whole organization and translate digital business objectives into actions (Vial, 2019). Such actions can take the form of new technologies changing and improving certain processes or operations within an organization (Vial, 2019). On the other hand, this also requires employees to adopt new set of skills and roles to implement these actions (Pinto et al. 2023; Vial, 2019).

As can be observed organizational structure, culture, identity and legitimacy can actually become barriers hindering digital transformation (Vial, 2019). They can be so deeply embedded into everyday practices that they are hard to accommodate to the disruptive and innovative nature of digital technologies implemented to achieve a digital transformation (Vial, 2019). Therefore, a major challenge within digital transformation is to ensure that employees adopt new digital tools and applications to provide digital services and offerings to customers (Pinto et al. 2023). For digital transformation to lead to all organizational and customer benefits stated earlier, retailers have to take a number of factors into account which can potentially hinder the completion of their transformation (Vial, 2019).

2.3.2. Adoption

When talking about the use of new digital technologies, adoption is a crucial aspect to consider. Although there has been no academic approach to studying the adoption of design systems in particular, there is an extensive body of literature on innovation and technology adoption, as well as the adoption of information systems (Tornatzky et al. 1990; Venkatesh et al. 2003; Yusof et al. 2007; Ahmadi et al. 2018; Nguyen et al. 2022). As design systems can be seen as an information system for digital design assets and practices, this literature can be tied to the adoption of design systems as well (Davidsson & Hennings 2020).

The adoption of new technologies proceeds gradually through several stages that are characterized by a complex interaction between technical, social and organizational elements (Seran et al. 2022). Furthermore, the role of humans in the adoption of information systems is highlighted by several researchers. Senior managers are worried about the potential resistance in adoption of digital tools and processes by employees due to lack of will (Mugge et al. 2020). Indeed, senior managers hold “organizations' overall resistance to change as their top operational risk” (Mugge et al. 2020, p.28). When conducting an extensive review of research on barriers to changing the value creation process through digital technologies, Vial (2019) identifies Inertia, resistance as main inhibitors caused within the human factors. According to Yusof et al. (2007), human dimension that are impacting the adoption of information systems can be categorized into user involvement, clarity of system purpose, user skills, user roles, user perception and user training. Their finding suggests that having the right user attitude and skills base together with good leadership, IT-friendly environment and good communication can have positive influence on the system adoption (Yusof et al. 2007).

Nevertheless, when looking at different studies that have been conducted in this field, the factors affecting innovation adoption were observed to differ across different technologies, contexts, industries, and cultures (Youssef et al. 2022). Therefore, the adoption of a specific information systems within the retail industry, explicitly within IKEA, will most likely exhibit specific characteristics that will have to be explored within this thesis.

3. Theoretical Framework

The research within this thesis aims to explore the role of the design system SKAPA in connection with the digital transformation of IKEA. Furthermore, it investigates how managers at IKEA can increase the adoption of SKAPA. This chapter provides the theoretical framework proposed for conducting that research. As the literature review highlighted, the research is tied to digital transformation, information systems, organizational change and strategic management. Therefore, the theoretical framework should encompass these various concepts to address the research questions effectively.

As stated before, digital transformation is a multidimensional and complex phenomenon that requires different initiatives, resources, and capabilities to be implemented. (Pinto et al. 2023). One theory that specifically captures this process, is the dynamic capabilities approach, which has previously been applied by researchers when studying information systems and the retail industry. As an extension of the resource-based view, this theory provides a useful lens for studying the social and cultural impact of digital technologies. The dynamic capabilities approach allows to gain a better understanding of the resources of a retail organization, as well as the role of human as enablers of digital transformation in retail industry. Therefore, it will be applied to the context of this thesis to answer the research question at hand.

3.1 Dynamic capabilities approach

The theory of Dynamic capabilities is a well-recognized paradigm, which can be utilized to investigate retail environments (Haag, 2021).

The dynamic capabilities approach is an extension of the resource-based view (RBV) theory, which argues that firms possess resources which allows them to achieve competitive advantage and increase their long-term performance (Wade & Hulland, 2004). Within the context of resource-based view, a firm's resources are all assets, capabilities, organizational processes, firm attributes, information and knowledge, which enable firms to implement strategies that improve its efficiency and effectiveness (Barnery, 2001). Connected to the retail industry, this theory operates under the assumption that retailers have their own unique resource base, consisting of both tangible (e.g. capital, equipment, buildings and inventory) and intangible (e.g. skills of individual employees, brand and copyrights) assets, as well as organisational processes and expertise, which can be combined to achieve a competitive advantage (Haag, 2021).

Overall, the Resource based view poses a useful tool for researchers to understand if, and how, particular parts of the firm affect the firm at large (Wade & Hulland, 2004). It is robust theory that has received wide acceptance in other management fields and has been applied to information systems research, as well as the retail industry (Wade & Hulland, 2004; Haag, 2021).

The dynamic capabilities approach is building onto resource-based-view, specifically addressing the challenges posed by emerging technologies and dynamic environments

(Vial,2019). It focuses on capabilities that are “required to guide companies through digital transformation, especially in rapidly changing and turbulent environments, such as the retail sector.” (Pinto et al. 2023, p.3). Within this thesis, the specific resources and capabilities within a firm that will be explored are design systems, as well as humans, particularly focusing on their impact on digital transformation. The dynamic capabilities approach has been applied to explore digital transformation, technology innovation and information systems, by a broad number of researchers and has become one of the most active research streams in the strategic management literature (Teece, 1997; Vial, 2019; Warner & Wägner, 2019; Pinto, 2023). At the same time, dynamic capabilities have been proven to be a useful lense within the retail environment, (Haag, 2021; Solem et al. 2023)

Overall, dynamic capabilities describe a “firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece et al. 1997, p.516). They consist of three broad clusters: *sensing* opportunities and threats, *seizing* opportunities, and *transforming* the organization's business model and wider resource base (Teece et al. 2007). Sensing capabilities refer to a firm’s ability to identify and assess market opportunities and threats, which are of great importance in constantly changing environments. Seizing capabilities refer to making strategic decisions that involve mobilizing resources to take advantage of those opportunities. Transforming capabilities refer to renewing and transforming organizational assets, structures, and cultures to adapt to market changes, ensuring that firms continue to be responsive in fast-changing contexts (Pinto et al. 2003).

In today’s retail environment, technological changes contribute to such an unpredictable business environment and companies need to unlock the capabilities required to successfully undergo a digital transformation (Pinto et al. 2023). Utilizing their dynamic capabilities allows companies to combine their digital assets and business resources to innovate products and processes that are crucial to sustain their competitive advantages. Therefore, firms should process multiple sources of information, and innovation to leverage opportunities and increase firm performance (Heredia et al. 2022). As Warner and Wägner (2019) highlight, digital transformation is an ongoing process of strategic renewal that uses advances in digital technologies to build capabilities that refresh or replace an organization's business model, collaborative approach, and culture. This means that ultimately, the dynamic capabilities approach “highlights the role that strategic management plays in adapting, integrating, and reconfiguring internal and external resources in turbulent environments” (Pinto et al. 2023, p.5).

In this context, we also want to investigate how humans can serve as enablers of digital transformation. Therefore, the way that humans in a company adopt and interact with digital technologies is a crucial aspect to consider. In the context of dynamic capabilities approach, successful implementation and adoption of new technologies can be seen as a dynamic capability of a company (Maroufkhani et al. 2020). Additionally, obtaining new knowledge or skills enables a firm to have a better technological proficiency, which can lead to an overall better performance (Galetsi, Katsaliaki, & Kumar, 2020). Consequently, to understand the role a design system can have in the context of a firm’s digital transformation the adoption of the system, is a crucial aspect to consider.

Overall, this thesis aims to explore how a design system can be utilized in the context of dynamic capabilities to aid the digital transformation of multi-national retailers in a dynamic retail environment. To do so, this thesis will identify the resources and dynamic capabilities that IKEA has at their disposal to face the challenges of digital transformation. To do so, the specific challenges that IKEA is facing, as well as their most important resources and capabilities will be identified. This will then be connected to the design system SKAPA to understand if and to which extent it contributes to IKEA's dynamic capabilities. Furthermore, the role of humans as enablers of digital transformation will be investigated. This will explore how humans relate to and impact IKEA's dynamic capabilities, as well as the design system. A useful concept to consider regarding the aim of this thesis, is digital maturity, which is based within the dynamic capabilities theory and describes how digital technologies are incorporated into corporate business models (Pinto et al. 2023).

3.2 Digital maturity framework

In connection to dynamic capabilities, Pinto et al.'s model of digital maturity suggests that a retailer must create certain capabilities related to five dimensions to reach digital maturity and consequently also competitive advantages (2023). Digital maturity "represents the degree of adoption and application of digital technologies in corporate business models" (Pinto et al. 2023, p.4). Indeed, "it comprises not only implementation of digital technologies, but adoption of a digital culture and the ability to assess and integrate the entire organization with digitally enhanced improvements" (Pinto et al. 2023, p.4). The ultimate goal for retailers is to become digitally mature, meaning that employees should get familiar with digital tools and applications and this better than competitors (Pinto et al. 2023). Therefore, it is a multidimensional construct, and a core long-term strategic goal for retailers to take on (Pinto et al. 2023).

To guide retailers through digital transformation researchers have developed many different digital maturity models, which help evaluate a company's digital maturity (Pinto et al. 2023). However, most digital maturity models created so far are specific to the manufacturing and industrial industries and environments (Pinto et al. 2023). Furthermore, most do not allow self-assessment, nor do they provide measurement items for a retailer to evaluate its digital maturity (Pinto et al. 2023). In addition, many researchers only provide dimensions which describe practices or initiatives common to digital maturity without providing a sequence nor order (Pinto et al. 2023). Most common digital maturity dimensions identified include strategy, operations, technology and governance (Pinto et al. 2023). This thesis uses Pinto et al.'s digital maturity model as it addresses all these research gaps and builds on past digital maturity studies.

Pinto et al. identified a condensed and summarized version of digital maturity dimensions, namely culture, technology, strategy, operations and market (Pinto et al. 2023). These dimensions are placed into three distinct levels, following a set sequence in order to better guide retailers during the development of digital capabilities (Pinto et al. 2023). In addition, this model is also specific to the retail industry and thus most relevant to this study. Pinto et al.'s roadmap to digital maturity can be seen below (2023).



Figure 1: Pinto et al.'s model of digital maturity (2023, p.8)

To overcome challenges during digital transformation such as “as lack of a data-driven culture, adequate training in digital tools, investments in digital technologies, governance mechanisms and a clear digital strategy, and the capabilities needed to deal with increasing data volumes and commercial transactions generated during contemporary business “ (Pinto et al. 2023, p.7) retailers have to perform well within each of the dimensions. This roadmap proves that to be fully digitally mature a retailer must involve the entire firm including “employees, processes, communications, and both hardware and software” (Pinto et al. 2023, p.4). Indeed, this roadmap starts with the dimensions “culture” and “technology” forming the basis on which digital transformation can be built on (Pinto et al. 2023). In fact, a cultural orientation can either ‘break or make’ digital transformation. A digital culture with leadership and management supporting experimentation and a willingness to learn, encouraging an openness to innovation, and fostering a change-oriented mindset amongst employees can lead employees to more easily adopt new technologies, and this way support the process of digital transformation (Pinto et al. 2023). Furthermore, the accessibility to technological resources also matters (Pinto et al. 2023). Retailers must develop digital assets such as information systems to create solutions that support an organization.

The next block of this roadmap leads managers to “strategy”. It measures the extent to which a retailer’s strategy generates results from implementing digital technologies (Pinto et al. 2023). A digital mature retailer is characterized by a coherent and clear digital strategy (Pinto et al. 2023). In addition, digital maturity is also characterized by the extent to which a digital strategy aligns with the overall business strategies a retailer holds (Pinto et al. 2023).

Finally, the last level of the roadmap towards digital maturity entails “market” and “operations” (Pinto et al. 2023). In fact, retailers seem to develop operations and market capabilities when they have reached digital maturity (Pinto et al. 2023). In other words, retailers create collaborative relationships to change their value-creation process according to fast changing customer needs (Pinto et al. 2023). Consequently, as a result these retailers also have more advanced market capability (Pinto et al. 2023).

Although other important digital maturity dimensions such as ‘leadership’, ‘governance’ and ‘people’ might not be visually present in Pinto et al.’s model, they are represented in other dimensions in the model (Pinto et al. 2023). For instance, the ‘people’ dimension is related to

skill development and a digital mindset, more specifically including culture, technology and management (Pinto et al. 2023). The ‘people’ dimension stays important, but its characteristics are diluted among the ‘technology’, ‘strategy’ and ‘culture’ dimensions in Pinto et al.’s model, since competencies are required for each of these dimensions (Pinto et al. 2023). Indeed, engagement and digital awareness amongst employees at high hierarchical levels is essential to the adoption of digital tools (Pinto et al. 2023).

3.3 How theory is used for this research

Within this thesis, the digital maturity framework will be used as a foundation to assess IKEA's digital maturity which is directly tied to the adoption of new digital tools such as SKAPA and IKEA's digital transformation. It will thus allow us to investigate the proposed research questions and gain a better understanding of digital transformation of retail, the implementation of design systems and humans as enablers of digital transformation. The digital maturity framework is grounded in the dynamic capabilities approach and will help us identify current capabilities IKEA uses to reach its digital maturity while also identifying which capabilities IKEA lacks in that could stand in the way of SKAPA's adoption.

As digital maturity represents the degree of adoption of technologies, it also helps to understand the adoption of design systems. The culture and technology dimension encompasses both the design systems and the humans interacting with it. The strategy dimension examines the overall strategic direction of the company and which role the new technology can play within that strategy. Ultimately, both of those dimensions impact a company's operations in the market and its ability to adapt to changes in its environment. As part of the dynamic capabilities approach, the digital maturity framework describes the strategic goal of optimizing the organizations capabilities and resources, to be able to adopt to a dynamic environment and achieve competitive advantages. This theoretic framework will be applied to guide the conducted research, which will be elaborated on in depth within the next chapter.

4. Methodology

In the following section the chosen methodology for this research is going to be explained in detail and argued for. Research methods and techniques were chosen to form a coherent picture and are going to be discussed and reasoned for. This methodology includes the research approach and the research design. Furthermore, an explanation of the individual techniques and method chosen for data collection and analysis is also provided. In the end, the quality of this research is also going to be discussed.

4.1 Research design

A research design's main purpose is to arrange research activities according to what will provide the best answers to the research questions and achieve the research aim (Easterby-Smith et al. 2015). This includes arguing for the choices made about research strategy, approach to theory development, time horizon, methodological choice, research methods and sampling methods. Choices made for data collection and analysis will also be discussed.

Single case study

A case study is used to “[look] in depth at one, or a small number of, organizations, events or individuals, generally over time” (Easterby-Smith et al. 2015, p.91). There are several existing research papers about digital transformation that have used case studies to study this phenomenon in the past such as the study *using enterprise systems to realize digital business strategies* (Mathrani, Mathrani, & Viehland, 2013), *Digital transformation strategy making in pre-digital organizations: The case of a financial services provider* (Chantias, Myers & Hess, 2019) or *Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective* (Matarazzo et al. 2021). This proves that case studies are a valuable research method to research digital transformation. Some of the existing research papers using case studies to research digital transformation are single case studies, while others are multi-case studies. For this research, both a multi- and single case study could have been used. However, given that this study is cross-sectional and not longitudinal and thus time was limited, a single case study proved to be the better fit as it often focuses on one single organization and not several at ones (Easterby-Smith et al. 2015). Indeed, a single case study allowed for better reliability and validity of the findings which could have been threatened through a multi-case study where less interviews could have been conducted per organization. Consequently, there would have been less chances to reach data saturation within each organization's gathered data. Furthermore, finding several retailers going through a digital transformation and finding multiple participants in each of these companies would have not been doable to do within the given time frame. Also, multi-case studies are often used to compare findings gathered from different organizations; However, in this case about digital transformation, the digital tool researched is a design system which, as stated previously in chapter one and two, is heavily dependent on an organization's structure, culture, identify and processes and can thus vary tremendously depending on the type of organization. Therefore, there would be less relevance in comparing and trying to benchmark different design systems. Finally, although single case studies are only looking at one organization and do not compare

findings to another case, they can still be quite convincing tests of theory and are so powerful that they can break a dominant theory (Easterby-Smith et al. 2015). Using a single case study is also beneficial as it allows to illustrate abstract concepts (such as a digital transformation) and inspires new ideas (Easterby-Smith et al. 2015). Overall, a single case study is more constructionist in nature and usually involves personal contacts through interviews within one organization, however sampling from a variety of individuals (Easterby-Smith et al. 2015).

Some criticism of case studies include that the findings are not universal and not easily applicable to other companies, nor are they generalizable (Easterby-Smith et al. 2015). Furthermore, single case studies compile huge sets of data which allow for very varied (sometimes too varied) interpretations (Easterby-Smith et al. 2015). However, as mentioned in the quality section, generalizability is less relevant to the purpose of this research. Also, this study is exploratory, so using a case study is more beneficial to discover new ideas.

This research used the case of IKEA, as it best answers the research questions of this study. Arguments for why IKEA was chosen for this research can be found under the data collection procedure section.

Semi-structured interviews

Within this more qualitative research there are a many different kinds of qualitative data collection choices we could have employed, amongst which the most common ones are observations, interviews and focus groups (Easterby-Smith et al. 2015). We chose to use interviews, as mentioned in the previous section, a single case study most often uses interviews to gather data. However, this was not the only reason. Focus groups are often employed when the research aims to find out about “how certain groups of individuals react to an issue or shared experience” (Easterby-Smith et al. 2015, p. 136) and are often used in market research and politics. The aim of this study was to find out about manager’s and direct user’s individual perceptions and thoughts about design systems. In this case, using a focus group could have increased the chance of biased answers, as participants were all from the same company and could have lied to not make themselves look bad. Moreover, this study was not researching politics and was less focused on the consumer perspective (market research) but more on the employee perspective (inside an organization). Also, “the quality of focus groups depends on their composition; if the participants of a group do not share an experience or point of reference, it can be difficult to moderate their discussion” (Easterby-Smith et al. 2015, p. 136). Again, in this case both the managers and designers interviewed had very different job roles and worked in different markets and departments, so their perceptions of and experience with IKEA’s design system really differed and would have led to less reliable and valid findings through a focus group research. Regarding observations, we could have used observations on how designers use IKEA’s design system SKAPA. However, observations often involve getting to know the participants quite well which would have been a more lengthy process and not a good fit for this cross-sectional study (Easterby-Smith et al. 2015).

Overall, interviews were used as they are best suited to answer both research questions of this study by collecting data about participants' perceptions, experiences and observations (Easterby-Smith et al. 2015). Also, qualitative interviewing enabled us to uncover individual

respondent's (in this case, the managers' and designers') perspective, "which includes not only what their viewpoint is but also why they hold this particular viewpoint" (Easterby-Smith et al. 2015, p. 135).

The interviews were semi-structured to allow us to have some flexibility when collecting data (Easterby-Smith et al. 2015). As this research is exploratory, being able to explore and react to some of the respondents' insights further is important to be able to identify capabilities used to reach digital maturity. Structured interviews, would have not allowed for this flexibility; Whereas, completely unstructured interviews would have led to too much chaos in data collected which would have been harder to analyse and code (Easterby-Smith et al. 2015).

Cross-sectional research

This research did not account for changes over time, but rather just shows a "snapshot" of a phenomenon (Saunders & Lewis, 2018). Therefore, it can be classified as a cross-sectional study as it only involved one single measuring at one moment in time (Saunders & Lewis, 2018).

Pragmatism

The aim of this research is to find out how internal information systems, more specifically design systems, within the retail industry can contribute to a digital transformation. Linked to this, this study also aims to explore how managers can aid the adoption of such systems in order to reach digital maturity. This aim is reflected in the two research questions of this study.

To answer these research questions, this study relied on both subjective and objective knowledge interpretations, therefore using a pragmatic research approach (Saunders & Lewis, 2018; Easterby-Smith et al. 2015). First, the interview questions were build using a pre-defined theory/framework – Pinto et al.'s framework of digital maturity (2023) founded on the dynamic capabilities theory (Haag, 2021). Indeed, drawing conclusion from a representative sample is classified as a subjective form of knowledge interpretation (Saunders & Lewis, 2018). Then both managers and direct users of design systems were interviewed, using a more objective form of knowledge interpretation (Saunders & Lewis, 2018; Easterby-Smith et al. 2015). Pragmatism is a compromise between subjectivism and objectivism (Saunders & Lewis, 2018; Easterby-Smith et al. 2015). It combines "the need to balance concrete and abstract on one hand, and reflection and observation on the other"(Easterby-Smith et al. 2015, p.61). In addition, pragmatism is known to be a valuable approach specifically in management research due to its particular focus on processes that hold relevance in learning and knowledge studies (Easterby-Smith et al. 2015). Furthermore, choices made in this research design were determined by the development of solutions which would best answer this study's research questions and research aim. This is another indication of a pragmatic research approach (Easterby-Smith et al. 2015).

Abductive research

As mentioned previously, our research lies within the field of digital transformation in the retail industry. This includes identifying dynamic capabilities that managers and direct users of

design systems can take to achieve a digital transformation. Therefore, the dynamic capabilities theory, specifically Pinto et al.'s framework of digital maturity (2023), served as a foundation to explore elements that enable retailers to digitally transform in aim to achieve digital maturity. From this theory, data was then generated by interviewing managers and direct users of the design system SKAPA. This in turn created a more general theory on how a design system like SKAPA is put to use in IKEA's digital transformation and how managers can boost its adoption to contribute to IKEA's digital maturity. Therefore, this study used a bottom-up research approach to generate findings - initially moving from "some" theory to data (Saunders & Lewis, 2018). Indeed, it included both inductive and deductive data collection procedures (Saunders & Lewis, 2018). After gathering data inductively, we went back to the theory/framework and used new data to fill it out - in other words making use of an "evolving framework" (Dubois & Gadde, 2002 p.554). Indeed, throughout the research we constantly went "back and forth between framework, data sources, and analysis", combining both inductive and deductive approaches, therefore using abductive reasoning (Dubois & Gadde, 2002); (Saunders & Lewis, 2018).

4.2 Data collection procedure

In order to achieve the aim of this research, we chose to focus our research specifically on IKEA. This is also reflected in the way we ask our research questions, asking specifically about IKEA's digital transformation. We purposefully chose to focus on IKEA for this single case study as it is one of the world's most recognizable retail brands and therefore also often used as a best-in-class example in Swedish business schools (Stackpole, 2021). Given that this research is specifically looking at the retail industry, IKEA proves itself to be of particular value. Furthermore, IKEA started its digital journey about five years ago, one of its first steps being to hire Barbara Martin Coppola "a veteran of Google, Samsung, and Texas Instruments" to help IKEA with its digital transformation (Stackpole, 2021). Since this research overall explores digital transformation within retail, IKEA currently being in the middle of a digital transformation proved to be of value.

Therefore, IKEA really stands out and can be used as a uniquely interesting single case study. Indeed, IKEA's case enabled us to provide one of the best ways to answer this study's research questions and aim - uniquely demonstrating how a design system like SKAPA (a rather abstract concept) can be put to use and adopted by employees to aid with IKEA's digital transformation. Furthermore, the research questions which ask "*how*" can a design system like SKAPA contribute to IKEA's digital transformation? and "*what*" role can a design system's stakeholders, such as managers and designers, play for the digital transformation of IKEA? is an indication of an open-ended exploratory research which is usually used in case studies (Saunders & Lewis, 2018).

In general, IKEA works as a franchise system, which means that many groups of companies work together under one IKEA brand (IKEA n.d.-a). The IKEA Brand unites about 231.000 co-workers and hundreds of companies with different owners around the world. The retail business consists of 12 franchisees in 62 markets (IKEA, n.d.-b). Design operations and

therefore the SKAPA team are based within the Core Business Franchise, which is part of the Inter IKEA Group, held by Inter IKEA Holding B.V. IKEA, n.d.-c). The Core Business Franchise includes Inter IKEA Systems B.V., which is the owner of the IKEA Concept and the IKEA franchisor, as well as its related businesses. As the franchisor, Inter IKEA Systems B.V. continuously develops the IKEA Concept to ensure its successful implementation in new and existing markets. This directly connects to areas such as brand development, retail methods, sustainability, market potential and expansion. Core Business Franchise also includes IKEA Marketing & Communication AB, a company that creates and produces IKEA communication for customers and other IKEA organizations (IKEA, n.d.-c).

Data was collected qualitatively in the form of semi-structured interviews, as this best answered the two research questions of this study. We aimed to explore how IKEA's design system SKAPA, can be put to use as part of the company's digital transformation. The ultimate goal within digital transformation is to become digitally mature, in which the adoption of new digital technologies by employees plays a big role. Therefore, we also aimed to evaluate how managers can increase the adoption of SKAPA.

The most important stakeholders involved in a company's digital transformation include suppliers, consumers and employees (Pinto et al. 2023); (Reinartz, Wiegand & Imschloss, 2019). Since we explored digital transformation from an internal perspective we focused on the employees at IKEA. Mugge et al. states that "digital transformation is a top concern of senior leaders worldwide" (2020, p.27). Senior management being mainly responsible for long-term goals, makes digital transformation an important strategic goal (Mugge et al. 2020); (Pinto et al. 2023). Therefore, we decided to first interview managers, who have more strategical knowledge and are best suited to answer our first research question. As stated before, given that the adoption of new digital technologies plays such a big role in a company's ability to become digitally mature, the direct users of the design system SKAPA also become important stakeholders. The most direct users of the design system SKAPA are designers.

We interviewed two groups - group 1 consisting of managers, and group 2 consisting of designers – with the sampling criteria for managers to be involved in the management of SKAPA/SKAPA teams, and a sampling criteria for designers to be direct users of SKAPA. Hence, the interviewees were selected based on their job positions and roles, and based on this, how useful their insights would be to the purpose of the study (answering the research questions). This type of sampling method is also known as purposive sampling (Easterby-Smith et al. 2015).

It is important to mention that IKEA is a global retailer, therefore not only managers and designers from the headquarters (Ingka & Inter) in Sweden were selected but also managers and designers from other markets, more specifically from China and US. These markets were purposefully chosen, as they are located on different continents (outside of the EU) and are also amongst some of the largest and most important markets for IKEA. The US is one of the most important markets for IKEA in terms of sales (Statista, 2022); whereas China is predicted to become the next superpower, and is known to be a digital leader (McKinsey, 2017). Hence, in China competition within the digital field can be more threatening. Therefore, it is important to also evaluate IKEA's digital transformation in these markets as well.

Below in table 1 and 2, the interviewee’s information can be seen and how each of them meet this study’s defined sampling criteria.

Interviewee	Job title	Markets	How interviewees meet sampling criteria
Adam	Director of UX and Product design	US	Provides insights on how SKAPA is integrated in important markets
Bianca	Senior design Operation Producer, Digital Product Experience	China	Provides insights on how SKAPA is integrated in important markets
Clara	Global head of Design Operations, Digital Experience Design	Sweden	Strategic knowledge on design system
Diana	Product leader of Digital Design System SKAPA	Sweden	Strategic knowledge on design system
Elena	Identity manager at Inter IKEA Systems	Sweden	Strategic knowledge on design system
Fanny	Senior Design Systems Designer (working within marketing & communication’s department)	Sweden	Knowledge about the content of and participants of the onboarding, designs the SKAPA onboardings
George	Product Owner of Kompis team	Sweden	Strategic knowledge on design system/

Table 2: Interviewees information (Group 1: Managers)¹

Interviewee	Job title	Markets	How interviewees meet sampling criteria
Helena	Senior Product Designer	US	Direct use of SKAPA
Isaac	Senior Product Designer	US	Direct use of SKAPA
Josephine	Product UX Designer	China	Direct use of SKAPA
Karl	Junior UX Product Designer	Sweden	Direct use of SKAPA & new hire – so new to SKAPA
Louisa	Product UX Designer	Sweden	Direct use of SKAPA

Table 3: Interviewees information (Group 2: Designers)¹

¹ Note: The interviewee’s real names were replaced with fake names to keep their identity confidential.

Overall, seven interviews were conducted for group 1 and five interviews for group 2, adding up to a total sample size of twelve participants for this single case study. According to Alam, 10-20 participants is a sufficient number of participants in a single case study like this one (2020). Furthermore, this statement is supported by Roselle who recommends having 6-20 participants (1996). Using twelve interviewees also aligns with the general research approach taken in this study. As stated previously, we used a pragmatic research approach, which is founded on a constructionist view. According to Easterby-Smith et al. using a large sample size (anything superior to 30) in a single case study is common for research designs with a positivist approach (2015). Therefore, this rather small sample size aligned better with the research approach taken in in this study. This smaller sample size also allowed us to use a less structured interview process, more qualitative in nature, best fitted to an exploratory research like this one.

The interviews were conducted digitally through the app Teams, which allows a face-to-face exchange through a facetime feature. Therefore, just like remote interviewing, teams meeting interviews allowed for flexibility as the interviewees did not have to host us (Easterby-Smith et al. 2015). Nevertheless, there was room for immediate contextualization, depth and non-verbal communication thanks to the facetime feature (Easterby-Smith et al. 2015).

To ensure the smoothness of the interviews a topic guide was developed for each interviewee group (group 1 – managers & group 2 – designers) (Easterby-Smith et al. 2015). As mentioned previously the dynamic capabilities theory was used as a foundation for this research. More specifically, Pinto et al.'s digital maturity framework was used to develop the interview questions (2023). The building blocks of Pinto et al.'s digital maturity framework were used to create the interview questions. The first building block “culture & technology” (Pinto et al. 2023) was used to create the interview questions for group 2 (the designers) and the building block “strategy” (Pinto et al. 2023) was used to develop the interview questions for group 1 (the managers).

Minimal theoretical concepts or scholarly vocabulary were used in the interview questions to avoid any potential confusion amongst respondents (Easterby-Smith et al. 2015). However, some theoretical concepts had to be included such as “information systems”, “knowledge management” or “design system”. In these cases, the participants were asked whether they understand these concepts and if so to define them in their own words (Easterby-Smith et al. 2015). In case participants were unfamiliar with these terms, the interviewers gave the respondents a definition. The goal of a semi-structured interview is to be more flexible during the interview and have the option to ask more about a certain topic. Therefore “probes” questions were used such as “please tell me more about this” in aim to talk more about a topic with a participant leading to potential new findings (Easterby-Smith et al. 2015 p. 140). Furthermore, to avoid bias of research results, leading questions where responses could be predictable were avoided (Easterby-Smith et al. 2015).

Please go the Appendix A to see the full topic guides. Both include opening questions, key questions and closing questions (Easterby-Smith et al. 2015). Note, that to ensure more spontaneous and less biased answers, the interview questions were not sent to interviewees beforehand.

4.3 Quality

“The key justifications for doing research” lies in addressing the validity and reliability of this research (Easterby-Smith et al. 2015 p. 103). Planning for high validity and reliability will ensure that this study’s results “are more accurate and believable than common everyday observations” (Easterby-Smith et al. 2015 p. 103).

In the previous section under data collection procedure a few quality elements linked to sample size, sampling method and interviewing methods were already mentioned. However, in this section a summary of various quality elements will be shown.

Reliability evaluates the extent to which research produces consistent findings. In other words, it measures “whether an instrument will produce the same score for each occasion” (Easterby-Smith et al. 2015 p.83). Below actions taken to ensure the reliability of this study are mapped out. Please note that both external and internal reliability are addressed in this table.

Threats to reliability	Definition/examples	Techniques used to avoid threats
Participant error	Measurements taken at different times may yield different results (Saunders & Lewis, 2018)	By giving interviewees the choice to choose when to meet for the interview, we ensured interviews were least invasive for participants.
Participant bias	Participants could be prone to lie to protect their reputation (Saunders & Lewis, 2018)	The identity of interviewees is kept confidential, so there would be no benefit in lying.
Researcher error	An example is when the interviewer asks questions in different ways, leading to biased findings (Saunders & Lewis, 2018)	Notes were taken during the interview which were reread and summarized to ensure clearness and coherence. Furthermore, the interviews were recorded. Interview questions were proofread by our supervisor and adapted if unclear to respondents to avoid errors
Researcher bias	Different interviewers may interpret the same findings in different ways, leading to biased results (Saunders & Lewis, 2018)	To uncover differences in interpretation, we did the first round of coding separately to uncover. We discussed differences and agreed on commonalities. This way, we ensured correctness of interpretation.

Table 4: Threats to reliability and actions taken

Validity can be divided into external validity (research’s generalizability) and internal validity (conclusions by reduction of bias & correctness of results) (Easterby-Smith et al. 2015). The generalizability of this study is less relevant as this research is a single case study, only aiming

to answer research questions specific to IKEA’s digital transformation. In addition, as this research is founded on qualitative research it’s contribution mainly “lies in its uniqueness – and not in whether it can be replicated” which mainly applies to quantitative research (Easterby-Smith et al. 2015 p. 216).

The actions taken to ensure internal validity are summarized below.

Threats to internal validity	Definition/examples	Techniques used to avoid threats
Subject selection	Bias in results caused by respondents not representing the research population (Saunders & Lewis, 2018)	Purposive sampling was used, allowing researchers to choose interviewees based on their knowledge and background – for this study employees both managing and using SKAPA were chosen
History	Specific events that happen between two measurements and repeated over time can impact findings (Saunders & Lewis, 2018)	Not relevant as this research is cross-sectional
Testing	Extent to which data collection procedure may impact answers of participants and lead to inconsistent findings (ex. interviewees trying to please interviewer) (Saunders & Lewis, 2018)	As mentioned under data collection procedure, good interviewing techniques are used to guide the conversation and extract uncontaminated data (ex. we ask interviewees to give examples of their claims)
Mortality	Usually applicable to longitudinal research (ex. if interviewees pass away) (Saunders & Lewis, 2018)	Not relevant to this cross-sectional study
Ambiguity about causal direction	Confusion about the flow of causes and effects - overall direction of the study (Saunders & Lewis, 2018)	This research is based on the dynamic capabilities theory and the interview questions were developed based on the building blocks in Pinto et al.’s digital maturity framework (2023) The framework clearly shows a sequence of capabilities leading to digital transformation.

Table 5: Threats to internal validity and actions taken

Please find the limitations of this research in the final chapter of this study.

4.4 Method of data analysis

Coding was used to analyze the collected data. In other words, through more subjective interpretations we labeled and assigned meaning to pieces of the collected data. Coding was not only utilized to reduce or condense data but also to summarize it (Saldana, 2016). The process of coding was conducted in two separate cycles. First, one initial coding with more general labels, closer to the collected raw data, was conducted. This was followed by pattern coding, which is the assignment of codes with more general labels, representing larger amounts of data. Thus, pattern coding was used to condense and summarize the data collected from all interviewees (Rennstam & Wästerfors, 2018; Miles et al., 2018).

This research's data consisted of in-depth notes (including transcriptions) and recordings taken from qualitative interviews. Since the questions asked in the interview were derived from the elements of the digital maturity framework of Pinto et al. (2023), the answers of the participants align with this model's sequence. Consequently, the coding process also followed this underlying structure. Coding was done manually using the Miro app and can be seen in Appendix B (Miro, 2023).

During the coding process, we assigned our codes individually, to emit a broader analytic net and allow for a "reality check", by comparing each other's codes (Saldana, 2016). This permitted more ways of interpreting and analysing the data. As mentioned previously under the quality section, this also improved the reliability of the findings as it allowed to identify differences and commonalities in the assigned codes. However, as Saldana (2016) highlights, we must ensure that our individual codes harmonize and reflect a shared understanding and interpretation of the phenomenon that is studied. Therefore, coding was a collaborative effort (Erickson & Stull, 1998).

As we used the words and short phrases from the interviewees' own language as codes, the coding method applied was called *in vivo* codes (Miles et al., 2018). This method was chosen because it is best suited for qualitative interviews and allows the use of terms that could be specific to the interviewed subgroup, in this case the managers and designers of IKEA, pointing out patterns and regularities (Miles et al., 2018).

4.5 Ethical considerations & implications

This research was conducted under consent of all involved parties (Lund University, IKEA, and us). Since this research involves data collected from one company, including potential confidential information, a thesis agreement was signed by all parties. Furthermore, the key principles in research ethics listed by Easterby-Smith et al. (2015), were taken into account while conducting this research. In table 5 below, these key ethical principles can be seen and how each key principle was addressed in this research.

For case studies like this one, there are specific ethical considerations to take into account, which can impact the findings of this study. Indeed, as case-researchers, we need to give special attention to the anonymity and confidentiality of interviewees which leads to questions such as how does anonymity and confidentiality of data impact the understanding and interpretation of findings (Willig, 2017; Josselson, 2007). For example, when writing the thesis, we had to decide about how to give the interview participants their anonymity and confidentiality without jeopardizing our findings (Willig, 2017; Josselson, 2007). Ideally, in addition to keeping interviewees names and gender confidential we could have also kept their job positions and markets they work in confidential (Easterby-Smith et al. 2015). However, if we would have hidden all information of the interviewees including the job title and markets they work in and this way completely de-identify the data, it would have made our data less valuable to readers. Readers would not have been able to see commonalities or differences in the perceptions and experiences between employees from the Swedish, Chinese and American market nor differences between higher level executives and employees working in junior positions in the findings. These differences and commonalities mattered as they were used to draw important conclusions. So, keeping the job titles was crucial to avoid bias or errors in our findings. One could argue that sharing the interviewee’s job titles and markets in our study is unethical, but IKEA is an international corporation which holds enough employees with the same job titles across different markets so that the interviewees’ identity cannot easily be uncovered through their job titles. Furthermore, we might have revealed the market they work in, but since IKEA has many remote job positions, often interviewees do not even live in the market they work for. This is also further protecting interviewees’ identities and personal data. It is also important to mention that all interviewees have confirmed that they consent with us sharing their job titles and market they work in.

Moreover, one could argue that it is unethical to have shared the company’s name (IKEA) of our single case as it reveals its identity and therefore data can be connected to it. However, not sharing it could have again completely de-identified our data and given it less value, relevance and taken it out of its context. IKEA being one of the most successful retailers in the world is recognizable to readers and makes findings drawn from interviewing its employees more valuable to readers. It also adds power to our final claims and findings. Therefore, as IKEA agreed for its name to be shared. This is not in this case unethical.

Key principles in research ethics	Actions taken to address the ethical implications
Ensuring that no harm is made to interviewees	Interviewee’s identity and personal data are kept confidential and anonymous. No interviewee was forced to participate, participation was based on voluntary actions.
Respecting interviewees’ dignity	During the interviews, we made sure to dress appropriately and used standard English Language.

Collecting an informed consent of interviewees'	Prior to each interview, an email was sent out to every interviewee with the scope of the research and its aim. Interviewees were allowed to withdraw at any point in time if they did not want to participate anymore.
Providing interviewees' confidentiality	Interviewee's identity and personal data are kept confidential and anonymous.
Protecting interviewees' anonymity	Interviewee's identity and personal data are kept confidential and anonymous. In the empirical findings sections, interviewees names are replaced with standard abbreviations of their job titles.
Avoiding deception about research aims	Research aim was discussed with both the university supervisor and the designated IKEA team, prior to conducting the research.
Declaration of conflicts of interests	As this is a single case study, and all interviewees work for the same organization, no conflict of interest is present in this research. Also, interviewees' identity was kept confidential and anonymous.
Transparency in the research communication	We were in constant close communication with both our IKEA team and our university supervisor. Each interviewee was briefed on the research topic per email.
Preventing the publication of misleading research results	Gathered data and interview findings was checked by the IKEA team and our university supervisor before final submission.

Table 6: Key principles in research ethics and actions taken to address them (Easterby-Smith et al. 2015)

5. Empirical findings

The following chapter addresses the findings from the interviews, connecting them to relevant literature as well as the theoretical framework, specifically the dynamic capabilities approach and digital maturity. While chapter 5.1 will primarily tackle the research question: *How can a design system like SKAPA contribute to IKEA's digital transformation?* the chapter 5.2 will focus on answering the question: *What role can a design system's stakeholders, such as managers and designers, play for the digital transformation of IKEA?*

The framework below summarizes the main findings and will serve as a structure, to guide the reader through this chapter. Each subchapter will discuss different blocks and explain the different interrelations. Most of the findings aligned with the variables mentioned in the theory used to investigate IKEA's digital transformation and SKAPA's adoption. However, one new variable was found. This variable is not directly mentioned in the theoretical framework used in this study, namely the element of community around SKAPA which we found out can also help improve its adoption and the overall digital transformation through fostering collaboration.

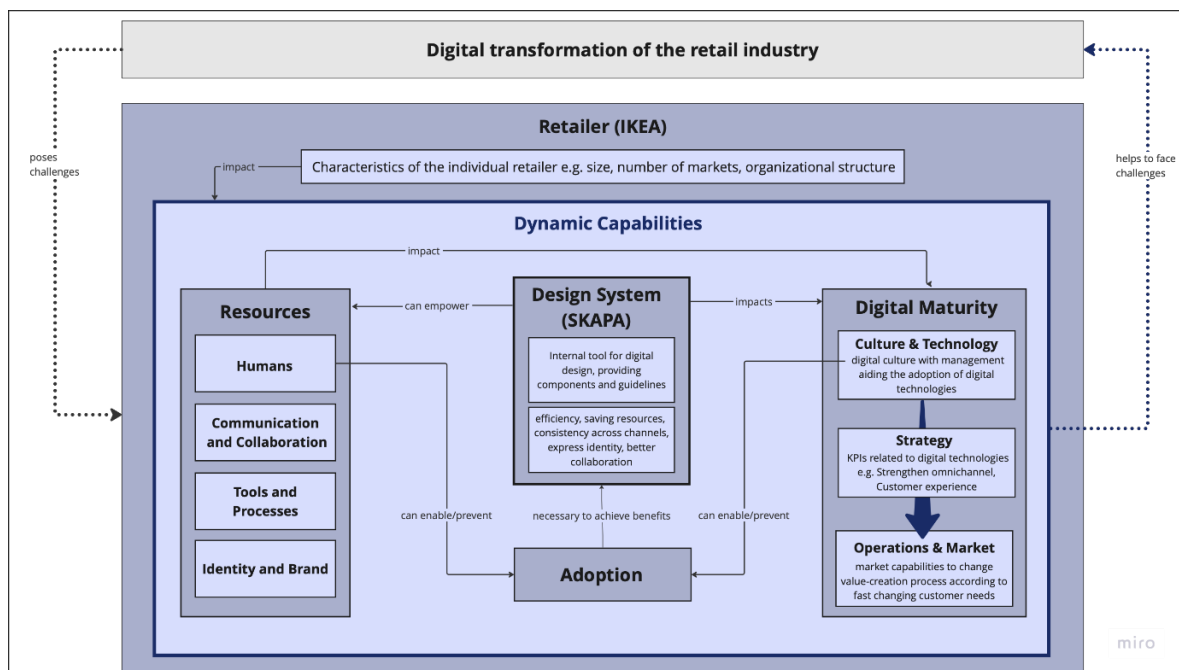


Figure 2: Framework summarizing the overall findings of this thesis

5.1 IKEAs dynamic capabilities to face digital transformation

To understand how a design system like SKAPA can contribute to the digital transformation of retailers like IKEA, it is crucial to first understand how IKEA is impacted by digital transformation and which capabilities they have at their disposal to face the challenges posed by digital transformation. This directly ties into the dynamic capabilities approach, which will

be related to IKEAs resources, the design system SKAPA, and the company’s digital maturity. Overall, the findings within this section help to understand the environment in which the design system is implemented and how it interacts with IKEAs other capabilities. As the research question is concerned with the bigger picture of IKEAs digital transformation and closely tied to strategic challenges and directions of IKEA, the chapter will primarily draw from the insights given by managers.

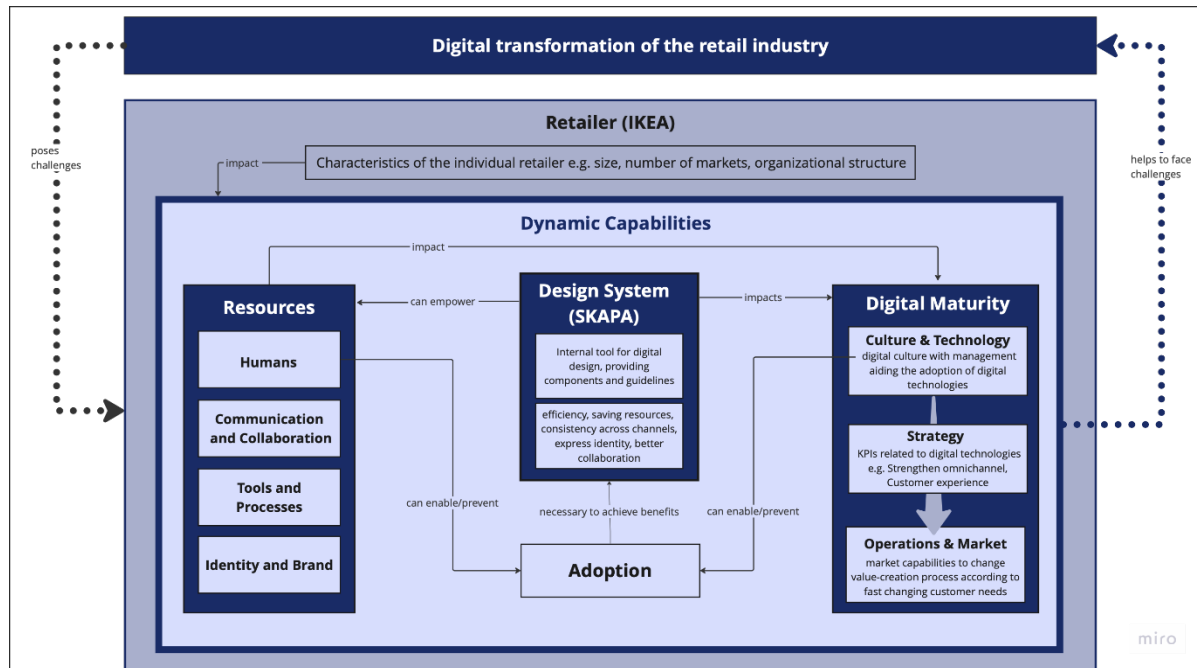


Figure 3: Framework of findings, highlighting the parts addressed in this chapter (5.1)

5.1.1 Digital Transformation posing challenges

Multiple managers talked about the way that changes in the retailing landscape and the actions of their competitors pose challenges for IKEA. As a multinational retailer, IKEA is heavily impacted by the emergence of new technologies (Youssef et al. 2022), digitalization of businesses (Jocovski et al., 2019) as well as the fierce competition (Pinto et al. 2023) and changing customer needs (Vial, 2019). Clara, Global head of Design Operations, describes these challenges as IKEA “being confronted with a fast-paced environment in which competitors are developing products at high speed” (Clara, Global head of Design Operations, IKEA Sweden).

These challenges are driving the adoption of new digital technologies to improve efficiency and adaptability (Youssef et al. 2022). While digital transformation is affecting the basic pattern of how organizations create value (Mugge, 2019), new technological tools enable retailers to create more value by attracting new and retaining existing customers (Savastano et al. 2019). And indeed, as Bianca, the Senior Design Operation Producer based in China, highlighted, “IKEA needs to find ways to navigate these challenges and utilize digital tools in order to conduct better customer engagement” (Bianca). Multiple managers agreed to this,

stating a need for optimizing existing IT infrastructure and the implementation of new technologies, such as their design system SKAPA.

However, implementing new technologies needs to be accompanied by other activities to ensure successful digital transformation of the retailer, as digital transformation requires to change habits and ways of working (Ellström et al. 2022). The environment direct users of digital technologies work in, including an organization's culture, structure, and processes can be a point of departure for enabling digital transformation (Roper & Roper, 2012); (Pinto et al. 2023). This can also be related to the digital maturity framework by Pinto et al. (2023), who describes a need to align technology with organizational structure, technological infrastructure, and digital culture for a retailer to reach the crucial strategic goal to become digitally mature.

Indeed, the interviews highlighted that IKEA is facing the challenge to adopt their organizational structure and the ways of working in order to be able to navigate their digital transformation.

“Digital transformation is creating new structures but not necessarily looking very deep into ways of working around these structures, so this is a challenge, because there is a brand-new organization, but it has not been given enough direction on how to work within the organization” (Clara, Global head of Design Operations, IKEA Sweden)

Throughout all interviews, one of the biggest challenges mentioned was finding ways to transform from physical to digital retailing. This is due to an increasing number of possible touchpoints facilitating the need to develop omnichannel retailing (Rigby, 2011). Indeed, IKEAs effort to empower digital channels and create an omnichannel experience was confirmed throughout the interviews.

“Selling product in big warehouses has been the IKEA way of business for the past 40 to 50 years and it is a challenge to transform that to a digital way of retailing” (Clara, Global head of Design Operations, IKEA Sweden)

The aim is to offer an omnichannel customer experience, creating a coherent brand expression and utilizing multiple touchpoints both online and offline. However, successfully implementing an omnichannel strategy is very complex and poses a number of challenges (Jocovski et al., 2019). As IKEAs primary expertise lies in the physical touchpoints “there is change and progress holding us back, because there is a lot of things that we don't know and where we have less experience.” (Diana, PO of SKAPA, IKEA Sweden). This shift from selling products in stores to also being digital of course has implications for several areas, such as customer experience and brand identity.

In line with this, multiple managers mentioned the challenge to express the IKEA identity in digital channels. They agreed that, with an established strong presence in physical channels, IKEA has crafted a distinct customer experience that is connected to the warehouse and the way that the IKEA identity manifests within the store. The goal in omnichannel retailing is to manage channels together so that the interaction perceived by consumers is not with the separate channels but with the brand (Savastano et al. 2019). The interviews proved that IKEA is aware of this, with Elena, Identity manager at Inter IKEA Systems, stating it is IKEAs aim

to “understand the core of the brand and meet customers in different spaces” (Elena). This is also where a design system comes in handy, as it provides a consistent design language across all channels, creating a consistent user experience (Fessenden, 2021).

5.1.2 IKEAs dynamic capabilities to overcome these challenges

Talking about ways to face the challenges managers at IKEA identified a number of resources and capabilities that they can utilize. This directly relates to the dynamic capabilities approach, which focuses on capabilities that are “required to guide companies through digital transformation, especially in rapidly changing and turbulent environments, such as the retail sector.” (Pinto et al. 2023, p.3). Utilizing their dynamic capabilities allows companies to combine their digital assets and business resources to innovate products and processes that are crucial to sustain their competitive advantages (Heredia et al. 2022).

Regarding the research question of this thesis, the interviews revealed three big areas that impact IKEAs dynamic capabilities: overall resources, digital maturity and more specifically the design system SKAPA. These three areas are interrelated, as many of the factors impact each other and can serve as enablers or barriers for one another.

Resources

One of the most crucial resources mentioned in the interviews were “people”, which refers to the coworkers at IKEA. As Clara highlighted: “everything we do is based on the people we hire” (Clara). Indeed, multiple researchers highlight that digital transformation is not only about new technologies but also about the people working with them. In general, change, such as a company’s digital transformation, usually starts with employees internally before it can be transferred externally to consumers. (Roper & Roper, 2012); (Pinto et al. 2023). Therefore, a major challenge within digital transformation is to ensure that employees adopt new digital tools and applications (Pinto et al. 2023).

Directly related to the humans at IKEA are communication and collaboration, which were stated as other important capabilities for developing and sustaining competitive advantages. Indeed, cross-functional collaboration is considered an important element contributing to digital transformation (Solem et al. 2023). At the same time, silos embedded in a retailer’s organizational structure can stand in the way of collaboration and thereby prohibit digital transformation (Vial, 2019). Here, a lot of room for improvement was identified for IKEA, as managers agreed that communication, prioritization, and collaboration are currently not working optimally. Additionally, managers as well as designers mentioned silos across the organization. As an example, Clara posed the question

“How do we navigate the fact that we have hired over 2000 people in the last two years, that come from different companies? Do they talk the same language? Do we need a common vocabulary?” (Clara, Global head of Design Operations, IKEA Sweden)

Here, tools and processes pose important resources. Overall, new technological tools enable retailers to create more value by attracting new shoppers and retaining existing customers

which increases revenue. Furthermore, tools can contribute to reducing costs (Savastano et al. 2019). One of these tools within IKEA is the design system SKAPA, which was identified as an internal tool for digital design. By providing components and guidelines it standardizes the expression of IKEAs visual identity online. As Elena, Identity manager at Inter IKEA Systems expressed: “SKAPA is a powerful and useful tool for capabilities in order to deliver higher design values” (Elena).

Other factors, that was mentioned as resources within IKEA by multiple interviewees were identity and the brand. This is closely tied to IKEAs goal to provide their customers with an engaging omnichannel experience and directly impacts IKEAS value-creation. This is best expressed by the following quote:

“Offering an engaging customer experience across channels provides value to customers, but to successfully engage through different touchpoints, a strong brand is required” (Elena, Identity manager at Inter IKEA Systems)

Design System

When asked about which role they attribute SKAPA within IKEA and IKEAs digital transformation, Adam (Director of UX and Product design, IKEA US), the Director of UX and Product design in the US, stated that “SKAPA could be a solution for the digital future of IKEA” (Adam, Director of UX and Product design, IKEA US). Overall, the benefits of SKAPA were identified as efficiency, saving resources, consistency across channels, expressing the identity, and facilitating collaboration.

Connecting the dynamic capabilities approach to characteristics of SKAPA and the role it plays within IKEA suggests that the design system is not only a resource itself but can also help to empower other resources within IKEA. As a digital tool, SKAPA can support IKEAs coworkers, aid communication and collaboration, express the identity online, and contribute to building a strong brand. At the same time, the efficiency that SKAPA offers actively saves resources.

SKAPA supports humans across the organization, both in physical and digital environments. This refers to designers using SKAPA building digital products, but also the coworkers that use the applications which were build using SKAPA in their daily work routines. SKAPA can be utilized for quick trial-and-error iterations, sharing proven solutions, and allowing teams to focus on individual needs of their users instead of building simple components over and over again. This suggests that strengthening SKAPA ultimately means strengthening the coworkers at IKEA.

“I am hoping to see real growth as it breaks into channels more, it has great customer facing pieces, but I am most excited about coworker side” (Adam, Director of UX and Product design, IKEA US)

Overall, the managers see a lot of potential about the future of SKAPA. While currently SKAPA is used mostly for digital products, it could evolve and be utilized in more scenarios. Adam states that there is room for “tremendous amount of digital experiences in brick and

motor store and physical customer meeting points, like for example screens in the store.” Here, SKAPA can be used as well to merge the channels and fully align the brand expression.

SKAPA also helps with that coherency of design across by acting as the “digital trade dress of the brand. This helps the IKEA brand because “coherency builds trust, and familiarity” (Elena), which contributes to building a strong brand that can be aligned and expressed across channels. By creating visual consistency across channels a design system contributes to omnichannel retailing, but it also provides a shared baseline of information and a unified language within and between cross functional teams inside an organization (Fessenden, 2021). This unified language aims to help break functional silos and fosters more collaboration internally.

Nevertheless, to utilize the capabilities that SKAPA offers, it needs to be implemented into work processes across the organization, which is why adoption is a crucial topic to consider.

Digital Maturity

Digital maturity is a concept tied to the dynamic capabilities approach, describing how digital technologies are incorporated into corporate business models (Pinto et al. 2023). Looking at the digital maturity framework by Pinto et al (2023) a connection between adoption of SKAPA, digital maturity and IKEAs digital transformation can be made. In the framework, culture, technology, strategy, operations and market are identified as dimensions of digital maturity. Together, they are providing a sequenced roadmap to better guide retailers during the development of digital capabilities (Pinto et al. 2023).

In the first block, Pinto et al (2023) state that a digital culture with leadership supporting experimentation and encouraging innovation can lead employees to more easily adopt new technologies, thereby supporting the process of digital transformation (Pinto et al. 2023). This also ties into the relationship between SKAPA and the coworkers at IKEA, as well as the adoption of SKAPA, which will be addressed more in depth in the following chapter. Furthermore, the first dimension of digital maturity entails technology and describes the way that technological assets are incorporated into an organization’s business, processes, and products to promote business development. (Pinto et al. 2023). This is in line with the interviewees stating that utilizing effective digital tools and processes are considered crucial resources for IKEA. As mentioned earlier, the design system SKAPA can be considered part of these efforts and the technology dimension. Furthermore, the interviews highlighted that having a mature design system, contributes to IKEAs digital maturity and positively impacts the way the company is perceived by designers. This is underlined by Isaac, a Senior Product Designer in the US market stating that:

“A Design system is a sign of digital maturity of the firm. Having a design system it is a thing that is attractive for designers when joining the company” (Isaac, Senior Product Designer, IKEA US)

A design system holds information and knowledge about design, common practices as well as a company's visual identity. This way it can contribute to sharing digital information and knowledge. Connected to this, the managers described that “SKAPA can minimize flow of information on how to design effective solutions.” (Clara) and facilitate the flow of information

across different teams (Adam, Director of UX and Product design, IKEA US). This improves organizational effectiveness, ultimately aiding companies to enhance essential organizational capabilities and realize their digital business strategies (Mathrani et al. 2012; Zwass, 2022).

The next block of the roadmap refers to “strategy”, stating that a digital mature retailer is characterized by a coherent and clear digital strategy and alignment with the overall business strategies, which indicates the extent to which a retailer’s strategy benefits from implementing digital technologies (Pinto et al. 2023). Looking at IKEAs digital strategy, the interviewees identified a number of strategic goals connected to digital transformation. Developing the digital channels at IKEA and creating an omnichannel experience to better engage customers, are in line with and a part of IKEAs overall strategy and efforts to reach more customers, while sustaining and growing their competitive advantages. Contrary to the recommendation by Pinto et al (2023), IKEA does not have one coherent and clear strategy, but a variety of strategies and sub strategies, which holds the risk of lacking clarity and creating confusions. Adding to this risk are other concerns brought up by both managers and designer, namely the complex and confusing organizational structure of IKEA, as well as an overload of information.

Talking about how the digital strategy relates to IKEAs overall business strategy, the managers agree that they overlap, with the digital strategy directly deriving from IKEAs vision “to create a better everyday life for the many people.” Multiple managers agreed that it is IKEAs ambition to reach more customers, through empowering their digital channels. The importance of this is underlined by Diana (PO of SKAPA, IKEA Sweden), stating that:

“Leadership is putting the focus on digital as well; IKEA has been mostly physical but they have acknowledged it and are working on moving towards being the same maturity level in the digital world” (Diana, PO of SKAPA, IKEA Sweden)

Overall, developing the digital channels at IKEA and creating an omnichannel experience to better engage customers, are in line with and a part of IKEAs overall strategy and efforts to sustain and grow their competitive advantages.

At the same time, it stands to question how following and executing the digital strategies plays out in daily-business and activities across the organization. Looking at the statement that having too many strategies is a problem for IKEA and connecting it to the observations made when talking about IKEAs organizational structure, suggests that there might be internal hindrances to actually implementing these digital strategies. In this context, silos in the organization, as well disconnect and lack of prioritization of digital efforts in some parts of the company, could prevent IKEA from working towards their shared goal of reaching and “making live better for the many people” (Clara).

In this context the design system SKAPA, which is considered a “part of human-technology aspect of IKEAs digital strategy” (Clara) could potentially help IKEA overcome a silo approach of building digital experience by offering a unified solution, as well as more collaborative and intuitive ways of working (Clara, Adam - Director of UX and Product design, IKEA US). At the same time, SKAPA can help create a unified brand experience online (Clara

- Global head of Design Operations, Elena - Identity manager, Diana - PO of SKAPA, IKEA Sweden).

The last level of the roadmap entails market and operations (Pinto et al. 2023), which refers to the fact that digitally mature retailers have more advanced market capabilities, enabling them to change their value-creation process according to fast changing customer needs. Here SKAPAs ability of rapid prototyping allows to test different solutions to new customer needs. Furthermore, SKAPA allows information about IKEAs identity and design principles to be accessed by stakeholders throughout the organization, allowing them to create on brand experiences. In doing so, it helps to strengthen the IKEA brand, which in turn holds a lot of potential for activities throughout different touchpoints and markets. Overall, having a design system implemented across the organization can aid to create efficient and resource-saving design and collaboration processes, for example when entering new markets or creating new digital products.

5.1.3 The role of SKAPA within IKEAs digital transformation

As this chapter has highlighted, IKEA has a variety of capabilities that they can utilize to address the challenges of digital transformation and navigate today's fast-paced retail environment. Looking at the role that the design system SKAPA can play in this context, reveals that it is not simply an isolated tool for digital design, but closely intertwined with IKEAs other resources. This specifically refers to the coworkers and their practices, as well as IKEAs path to digital maturity. SKAPA can empower IKEAs resources and has characteristics that can specifically address the challenges IKEA is facing. This is especially relevant for IKEAs identity and brand, and the way they can be expressed within the context of optimizing digital channels and creating an engaging omnichannel customer experience. In doing so, SKAPA contributes to IKEAs digital and overall strategy, allowing them to navigate different markets and meet customer needs. However, to fully utilize these capabilities, SKAPA needs to be adopted and used correctly by coworkers across the organization. In this context, the adoption of SKAPA is heavily intertwined with IKEAs path to digital maturity. Therefore, the following chapter will specifically address the relation between SKAPAs adoption, digital maturity, characteristics of IKEA as a company, as well as the humans at IKEA.

5.2 Role of SKAPA’s adoption in IKEAs path to digital maturity

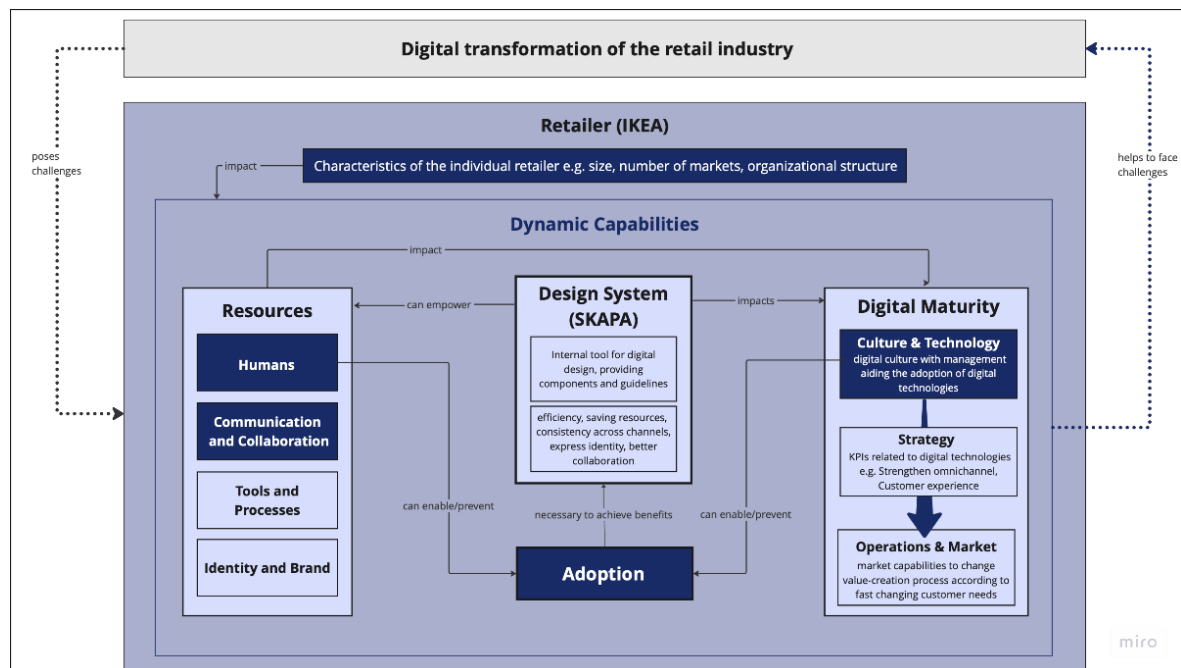


Figure 4: Framework of findings, highlighting the parts addressed in this chapter (5.2)

To overcome challenges during a digital transformation, good performance across each dimension of Pinto et al.’s digital maturity model is needed. As seen from the interviews with IKEA and discussed in the following sections, humans, also called the “people” dimension (Pinto et al. 2023), are a big part of this performance and human’s adoption of digital tools such as SKAPA was proven to be a crucial aspect for IKEA to become digitally mature. Indeed, IKEA’s culture, technology and strategy can act as capabilities to reach IKEA’s digital maturity; However, poor performance can also quickly become an inhibitor and prevent IKEA’s digital transformation and can include aspects like a lack in leadership (Pinto et al. 2023). Therefore, the next sections will focus on discussing IKEA’s performance within the cultural and technology dimension and how “people” at IKEA are acting as enablers - through the adoption of digital tools like SKAPA - but also as barriers of digital maturity across a company’s digital culture and technology. Moreover, characteristics of individual retailers can impact human’s adoption of digital tools. A closer look at IKEA’s complex organizational structure is therefore also discussed as it poses certain challenges to SKAPA’s adoption and IKEA’s digital transformation.

As previously identified in the methodology, the “people” having to adopt SKAPA for IKEA to reach its digital maturity, are designers which are the direct users of SKAPA. Therefore, this section will mainly include insights from the designers interviewed at IKEA. However, literature also proved that good management can be used to further engage users to adopt new digital tools (Pinto et al. 2023). Therefore, some insights of the IKEA managers interviewed are also discussed in this section.

5.2.1 IKEA's Company Culture & Organizational Structure

The environment direct users of digital technologies work in, including an organization's culture, structure, and processes can be a point of departure for enabling digital transformation (Roper & Roper, 2012); (Pinto et al. 2023). So, looking at IKEA's current culture, processes and structure and assessing if these provide a good foundation for SKAPA's adoption and IKEA's digital transformation is important.

An Entrepreneurial Culture with Lack in Leadership

Most of the managers, both at IKEA Sweden (including Inter & Ingka) and at the franchisees outside of Sweden interviewed in this research argued that "adoption [is] usually a first KPI to measure success"(Adam, Director of UX and Product design, IKEA US) and "the goal is that SKAPA is used by all coworkers who are creating digital products in IKEA" (Diana, PO of SKAPA, IKEA Sweden). In the future SKAPA will extent to different departments such as the commercial (marketing) department and even "extend [to] outside IKEA" (Elena, Identity manager, IKEA Sweden). What these interviewees are saying is that SKAPA's adoption across the whole organization is a priority for it to succeed and thus also plays a role in achieving IKEA's digital transformation. This links directly to Pinto et al.'s theory of digital maturity which suggests that a company can become digitally mature through the complete adoption of its digital technologies (2023). However, for a company like IKEA to become digitally mature the first step lies in adopting a digital culture. Indeed, as Pinto et al. stated, "not only [the] implementation of digital technologies, but [also] adoption of a digital culture and the ability to assess and integrate the entire organization with digitally enhanced improvements" has to be taken into account (Pinto et al. 2023, p.4). In fact, a company's cultural orientation can either 'break or make' digital transformation, which adds to its importance (Pinto et al. 2023).

Overall, at IKEA the perception of IKEAs culture among the managers, the SKAPA team and designers aligned. All of them stated that it is innovative, open for new ideas, and allows for exploration and experimentation. Both groups talked about a "very recipient culture" (Clara, Global head of Design Operations, IKEA Sweden) in which everyone is "encouraged to bring in new ideas" (Bianca, Senior design Operation Producer, IKEA China), which is creating room for suggestions, initiatives and innovation. Elena, Identity manager in IKEA Sweden, described a "mindset of exploring, finding new ways, trying and failing", as well as a "culture of not being satisfied with the status quo", which she attributes as an important part of innovation. In a similar way the designers mentioned that IKEA "supports making mistakes and learning from it" (Nikolina, Product UX Designer, IKEA Sweden). The environment was described as supportive, where "people participate in building ideas and help expressing ideas to others"(Bianca, Senior design Operation Producer, IKEA China). Even though the "process is slow until the final: yes, let's go" (Diana, PO of SKAPA, IKEA Sweden) there is a lot of support. This is in line with the flat hierarchies and equalness-culture, which were observed by Helena, Senior Product Designer in IKEA US.

As seen in the theoretical framework section of this research, IKEA's culture aligns with Pinto et al.'s (2023) definition of an ideal digital culture which should have management and leadership support experimentation and a willingness to learn, encourage an openness to

innovation, and foster a change-oriented mindset amongst employees. This kind of culture can lead employees to more easily adopt new technologies, and this way support the digital transformation (Pinto et al. 2023).

However, some participants from the group of managers mentioned that, while IKEA is open to initiatives and new ideas, it is not easy to implement them, as they are “tricky to navigate because there are thousands of ideas” (Bianca, Senior design Operation Producer, IKEA China). Diana also mentioned that “sometimes we get stuck on processes and consensus thinking” (PO of SKAPA, IKEA Sweden). This suggests that IKEA’s culture might allow for exploration and experimentation but also holds some challenges due to its bureaucracy which can make processes slow to implement and tied to IKEA’s flat hierarchies, an overload of input (ex. ideas) with a lack in a clear governance to define priorities. As Adam mentioned “in an absence of [proper governance] you create more work for every team” (Director of UX and Product design, IKEA US). Pinto et al. also argue that proper leadership is needed to guide the rest of the organization and that the engagement amongst employees at high hierarchical levels is essential to the adoption of digital tools (2023). Therefore, IKEA’s flat hierarchies reflected in its culture result in no real leaders guiding teams towards IKEA’s digital transformation, which poses a challenge to SKAPA’s adoption and IKEA’s digital journey.

A Complex Organizational Structure

Digital transformation is not only about implementing new technologies and besides a company’s culture, “its structure [...] [is] required to yield the capability to generate new paths for value creation” (Vial, 2019, p.118). An organizational structure can influence the assessment and integration of the whole organization with digitally enhanced improvements (Pinto et al. 2023, p.4). This makes a retailer’s organizational structure an important enabler for a design system’s adoption and a retailer’s digital transformation. Within this single case study, the organizational structure of IKEA resulted in being a very important dimension to look at within digital transformation due to its complexity.

Throughout the interviews, managers and designers mentioned a complex and confusing organizational structure, which causes information overflow and creates silos. These silos embedded in a company’s organizational structure can stand in the way of collaboration and thereby prohibit digital transformation and must be changed accordingly (Vial, 2019). Presently, IKEA is undergoing a restructuring of the organization with the goal to simplify the business. These silos are especially felt between IKEA Sweden and its franchisees outside of Sweden. According to several managers, IKEA’s complex organizational structure makes it difficult to get in touch with its franchisees and identify other SKAPA stakeholders. As Fanny, Diana and Clara stated:

“The Franchisee model prohibits [IKEA] from reaching people [and it is] very difficult to reach out and get attention from other franchisees, they act as their own companies, we don’t have access to their emails, infos, resources” (Fanny, Senior Design Systems Designer, IKEA Sweden)

“Within Ingka it would be easier, [as] we know teams and projects [and] getting adoption in Sweden and Ingka is easy, because [SKAPA] is mandatory to use there” (Diana, PO of SKAPA, IKEA Sweden)

There is “no process to get other markets on board, [IKEA needs to] work with stakeholders and use them to get contacts, discuss and use their network and infrastructure” (Clara, Global head of Design Operations, IKEA Sweden)

As can be observed from these quotes, the silos resulting from IKEA’s complex organizational structure lead to less collaboration between teams and between IKEA Sweden and its franchisees outside of Sweden and thus reduce the adoption of SKAPA and IKEA’s digital transformation. Also, these silos result in a waste of time and money. As explained by the Global head of Design Operations:

“There are multiple teams with overlapping responsibilities, which is not sustainable for the future and costs a lot of money” (Diana, PO of SKAPA, IKEA Sweden)

Overall, these cross-functional and cross-market silos stand in the way of SKAPA’s adoption across the whole organization.

SKAPA’s Community fostering Collaboration

The adoption of new technologies proceeds gradually through several stages that are characterized by a complex interaction between technical, social and organizational elements (Seran et al. 2022). Apart from the cultural and organizational element previously discussed, what also contributes to SKAPA’s adoption and thus IKEA’s digital transformation is the social element. Within this social element a new variable was discovered through the use of semi-structured interviews, namely community which seemed to boost collaboration amongst different teams and this way increase the awareness and adoption of SKAPA. As previously discussed in the literature review collaboration has been identified as an important factor of a digital transformation as it has the power to prevent cross-team or cross-functional silos (Vial, 2019).

Most designers try to actively contribute to the SKAPA community and collaborate, whether that is by sharing feedback, exchanging ideas, meeting with the main SKAPA team in Sweden or by collaborating. For example, Helena likes to “send over suggestions and ideas” (Senior Product Designer, IKEA US) to the SKAPA team to improve SKAPA. On the other hand, Louisa enjoys “meeting with main contact people from SKAPA to find solutions to problems” and find that there are “exchanges and mutual contribution between [her team] and the SKAPA team” (Product UX Designer, IKEA Sweden). Josephine holds “direct contact with the SKAPA team” (Product UX designer, IKEA China) and seeks to contribute to SKAPA improvements by sharing perspectives of the Chinese market. Finally, Karl finds participating in the SKAPA community useful as it is helpful “to see how other people are using it” (Junior UX Product Designer, IKEA Sweden).

Managers at IKEA are also involved in the SKAPA community and give importance to collaboration as they believe it can boost SKAPA’s adoption as it gets people excited and

allows for the collection of feedback. For example, Bianca participates in a “design review every week where they gather a bunch of designers to see what they are doing and give feedback” (Senior design Operation Producer, IKEA China). Elena also believes that having a “collaborative community, allow[s] to create better solutions and work towards IKEAs overall key objective” (Identity manager, IKEA Sweden). And finally, Adam observed that a sense of community also gets people “excited” about adopting SKAPA (Director of UX and Product design, IKEA US). Overall, SKAPA’s community seems to allow for more collaboration amongst teams and thus prevents potential cross-function silos.

However, connected to the general overflow of information caused by IKEA’s company culture and organizational structure neither designers nor managers find the time to always collaborate and be part of the SKAPA community. For example:

Isaac “does not use SKAPA slack as much as [he] should” and prefers “going to people first” because “projects move so fast, so [he does] not have time to [get in touch] with the SKAPA team” but he “would love more time to explore”(Isaac, Senior Product Designer, IKEA US)

Josephine also mentioned that “[she] knows about these SKAPA meetings but cannot always make time”. (Josephine, Product UX Designer, IKEA China)

Also, looking at SKAPA’s community both managers and designers interviewed find that currently more collaboration is needed and that SKAPA’s community has to grow. This is especially felt within the offices outside of Sweden which feel more isolated compared to SKAPA stakeholders in IKEA Sweden. According to Helena, Senior Product Designer at IKEA US, teams from other markets such as in the US do not feel this collaborative spirit. Helena says that “SKAPA team tends to feel dismissive of suggestions”, and she “wishes they were more collaborative”. Also, the SKAPA team used to have meetings with designers from the US, but it was moved to non-US friendly time which makes it impossible for US employees to join. As a result, in the US a lot of people still do not know that SKAPA exists. Both designers from China and the US stated that they have no direct involvement with some of SKAPA’s communication channels. In China,

“Slack [SKAPA’s main communication channel] is not an official tool so [Josephine does not] often use it or check it” (Josephine, Product UX Designer, IKEA China)

The overall lack in time to devote to SKAPA’s community caused by IKEA’s culture and organizational structure leads to less collaboration between teams from IKEA Sweden and the IKEA franchisees outside of Sweden and can stand in the way of SKAPA’s adoption and IKEA’s digital transformation.

5.2.2 The importance of humans in technology

Besides a company’s culture, structure and processes that create an environment for employees to adopt new technologies and drive the company through its digital transformation, the employees themselves also known as the “people” element become important to take into account (Pinto et al. 2023). The Technology dimension, which lies next to the cultural

dimension in one block in Pinto et al.'s digital maturity framework (2023) is described by the way that technological assets are incorporated into an organization's business, processes, and products to promote business development (Pinto et al. 2023). The incorporation of such technology is fully dependent on the users and their ability to adopt new technologies in their work but is also dependent on the engagement and digital awareness amongst employees at high hierarchical levels (Pinto et al. 2023). Most managers at IKEA found it crucial that designers (the direct users of SKAPA) get introduced properly to SKAPA in order to understand all its benefits and make a habit of using it. As Fanny (Senior Design Systems Designer, IKEA Sweden) mentioned "designers need to get familiar with the system" and they also should "build habits around [the] usage"(Bianca, Senior design Operation Producer, IKEA China).

Although Pinto et al.'s model does not visually represent such a "people" dimension in its framework the authors argue that it is represented in other dimensions in the model and spread across the 'technology', 'strategy' and 'culture' dimensions (Pinto et al. 2023). This can clearly be observed at IKEA as well, with designers being pushed to adopt SKAPA through IKEA's entrepreneurial culture. According to several managers one of the most important aspects in designers adopting SKAPA is a designer's own curiosity and investment; for example junior designer Karl from Sweden mentioned that he "browsed through [SKAPA] more than he [was expected to] use it because he was curious". Josephine (Product UX Designer, IKEA China) had a similar comment and stated that she was "interested and got to learn about SKAPA through own initiatives, and pushed the team to get familiar with SKAPA too". This proves that IKEA's culture pushes designers to be curious and experiment new digital tools such as SKAPA further enabling its adoption. Several designers and managers also mentioned that designers themselves spread SKAPA to coworkers and colleagues which further enables SKAPA's adoption throughout the whole organization.

"[Designer's] own initiative is driving adoption [as they are] personally interested, [and thus] push adoption". (Josephine, Product UX Designer, IKEA China)

"Right now [designer] find out about [SKAPA] lateral, organically from coworkers". (Helena, Senior Product Designer, IKEA US)

Pinto et al. (2023) suggest, leadership and management should be digitally aware and engaged to secure the adoption of digital tools, which also aligns with what manager at IKEA thought.

It is "important for SKAPA to have sponsors, we need to anchor product and service in higher level of hierarchy, so it is "pushed down" to users, [managers] tell [users] to use [SKAPA]". (Clara, Global head of Design Operations, IKEA Sweden)

However, what several designers also mentioned is that managers are not actively encouraging them to use SKAPA. . From the interviewees, it could be seen that the lack of leadership engagement in the adoption of SKAPA was especially present at the franchisees.

Managers "are influencing their teams, so we need them on board, as well as other teams from franchisees". (Fanny, Senior Design Systems Designer, IKEA Sweden)

Designer's own curiosity and investment can be seen as an enabler to SKAPA's adoption since they spread SKAPA across other designers at IKEA; However, getting the managers onboard is key for a full and successful adoption of SKAPA (Pinto et al. 2023).

The "People" dimension spread across all dimensions of Pinto et al.'s (2023) digital maturity framework also refers to skill development. In fact, as previously stated in the literature review of this research (under the adoption section) there are a number of human dimension that can impact the adoption of systems like SKAPA. According to Yusof et al. (2007) these can be categorized into user involvement, clarity of system purpose, user skills, user roles, user perception and user training. At IKEA Human dimensions that were most talked about and proved to be barriers to IKEA's digital transformation were user perception, system purpose, and user training. What was observed is that the system itself is too standardized and actions for improvements taken by managers are not being communicated, that there is a misalignment of SKAPA's purpose amongst managers and designers, and that SKAPA's training was too standardized and did not target managers enough.

Perception of the design system SKAPA

User perception counts to one of the most important human dimensions for the adoption of new digital tools (Yusof et al. 2007). For SKAPA's adoption, the designer's (direct users) perception of the design system therefore matters. Design systems are relatively new and "differ in how [they are] organized" so it is difficult for designers to really compare SKAPA to other design systems (Josephine, Product UX Designer, IKEA China). Overall, designers are happy with SKAPA and mentioned SKAPA to be quite advanced compared to other design systems they have used. Indeed interviewees mentioned:

"[SKAPA] is one of the most complete [...] and most advanced design system I ever used" (Isaac, Senior Product Designer, IKEA US)

"SKAPA works pretty good [as] using, searching and naming components is easy" (Louisa, Product UX Designer, IKEA Sweden)

However, the majority of designers interviewed feel like SKAPA does not account for different user needs, scenarios, and markets. Indeed, needs related to the usage of SKAPA differ in different markets, one example can be observed from the interviews conducted with both designers from China and the US:

"The Chinese market has different UX patterns and language systems [so the SKAPA] components can only be used as a reference for the Chinese market" (Josephine, Product UX Designer, IKEA China)

"[In the US] needs [are] slightly different, sometimes you have to get creative, ask around, tweak a little" (Helena, Senior Product Designer, IKEA US)

Similarly, needs are also different when designing for different user needs and scenarios. For example:

“Customer needs are different to coworker needs [and as SKAPA] started from the website, some stuff does not fit in the [mobile] app” (Helena, Senior Product Designer, IKEA US)

Designers mentioned that the lack in adaptability comes from Skapa’s origins. It was originally developed in Sweden and more relevant to this market. Furthermore its origins lie in web, meaning it was web-based and developed for digital designs on the web, but now has to evolve to a more flexible design system. Several designers mentioned that they have to adapt some components themselves manually, which costs them more time.

“Team[s] adopt basic core components, but [then] need to adapt and change a lot” (Josephine, Product UX Designer, IKEA China)

As discussed in the literature review negative user perceptions could stand in the way of such a design system’s adoption as it could lead to resistance or inertia to use SKAPA.

On the other hand, managers seemed to be aware of these negative user perceptions and ensured us they are addressing these issues. For example, the SKAPA team started to create so called “sub-systems” which hold several different varieties of one component which teams can create for their specific market or user needs.

Managers addressing current negative user perceptions but not communicating these to the rest of the organization such as direct users of SKAPA (ex. designers) defies the purpose of addressing them in the first place. It can create frustration and a feeling of being left out from a designer’s point of view, which can hinder the adoption of SKAPA.

Misalignment of SKAPA’s perceived purpose

Managers and designers seemed to have a different perception of the system’s purpose. Managers were focused more heavily on the benefit of efficiency, simplifications, higher quality products and resources/costs/time-savings achieved through the usage of SKAPA. Adam (Director of UX and Product design, IKEA Sweden) mentioned that “a lot of time [is] wasted redesigning the same things, consolidation should be a key part of design system”. Elena (Identity manager, IKEA Sweden), Diana (PO of SKAPA, IKEA Sweden) and Bianca (Senior design Operation Producer, IKEA China) mentioned words like “simplifying processes”, “facilitating processes”, “faster for less money”, “cost-effective”, “better ROI” and “cost-efficient” when describing SKAPA. This is because designers “don’t have to create from scratch” (Bianca, Senior design Operation Producer, IKEA China) anymore and can use already made components. This way no time is wasted anymore from “rebuilding the same things over and over” (Adam, Director of UX and Product design, IKEA US). Overall, Elena (Identity manager, IKEA Sweden) best summarized the purpose of SKAPA from a manager’s point of view which is “for teams to make better products faster for less money”.

On the other hand, designers had a different perception to SKAPA’s purpose, namely rather focusing on the user involvement attached to SKAPA. Indeed, designers suggested that SKAPA’s purpose mainly lies in providing components they use to design digital products which enable to better express IKEA’s identity. Josephine (Product UX Designer, IKEA China) said SKAPA enables to “brand IKEA all over the world” and that the IKEA franchisee

in China should use SKAPA so that the “China market [reflects] that identity”. Designers also perceive SKAPA’s purpose as an enabler of more collaboration between them and developers which also indirectly provides more consistency the design of digital products. Both Josephine (Product UX Designer , IKEA China) and Isaac (Senior Product Designer , IKEA US) aligned by saying that SKAPA enables to “keep the design consistency”, especially “between different teams”.

The difference in perceptions of SKAPA’s purpose can also be seen in how managers and designers defined SKAPA. Designers defined SKAPA as a tool used to create coherent digital experiences, especially focusing on the end-consumer benefits. As Isaac (Senior Product Designer , IKEA US) put it, SKAPA is a “components library that we use at IKEA to come up with application website designs“. Louisa (Product UX Designer , IKEA Sweden) defines SKAPA as “a language that should be used across all digital interfaces”. Through the use of SKAPA the ultimate goal from a designer’s perspective is to create “brand consistency” (Helena, Senior Product Designer, IKEA US) and “visual coherence to IKEA digital products” (Karl, Junior UX Product Designer, IKEA Sweden). Managers on the other hand, define SKAPA as a system providing components and guidelines, accompanied by services offered by the SKAPA team. SKAPA’s product owner from Sweden, best put in words what other managers also stated:

Skapa is an “internal tool, which was created for creative teams such as developers and designers and offers services, including trainings, materials and onboarding” (Diana, PO of SKAPA, IKEA Sweden)

Bianca specified these services and mentioned that “SKAPA [...] provide[s] components that are ready for usage [but also offers] guidelines to facilitate [the] creation of new components” (Bianca, Senior design Operation Producer, IKEA China)

Overall, designers were more focused on what SKAPA provides to the end-consumer when asked to describe it and its purpose; whereas managers described SKAPA as an internal tool and focused on what SKAPA’s purpose is for internal usage’s efficiency. This misalignment in managers’ and designers’ perception of SKAPA’s purpose could lead to potential misunderstandings and inertia in collaborating when adopting SKAPA (Vial, 2019).

One way fits all user training

According to Fanny (Senior Design Systems Designer , IKEA Sweden) there are two steps in introducing SKAPA to new hires. There is step one consisting of an “intro” and step two which consists of a more in-depths “onboarding for designers and developers [which they are] required to [take part in, to] get access to Figma”. The SKAPA team tries to start designer’s journey “early on [and] encourage to join SKAPA intros followed by onboarding” (Fanny, Senior Design Systems Designer , IKEA Sweden). The onboarding should show users “ how to work with [SKAPA] and ease that start”(Clara, Global head of Design Operations, IKEA Sweden). What Fanny and Clara are describing when talking about onboardings are user trainings provided to SKAPA’s stakeholders to teach them why and how to use SKAPA.

Both managers and designers found that SKAPA's onboarding is too standardized and not accessible enough, especially for employees working at the franchisees. Both managers and designers said that the onboardings are mainly tailored to direct users such as designers and developers. However, as identified earlier, managers at IKEA have to become more engaged and drive SKAPA's adoption better across teams. Therefore,

“[IKEA] could do even better at communicating and understanding what users need. Even considering non-core users so they understand SKAPA” (Clara, Global head of Design Operations, IKEA Sweden)

“[IKEA is starting to] communicate to and onboard product owners and engineer owners as well; [However, there is] no priority on higher managers yet” (Diana, PO of SKAPA, IKEA Sweden)

From these quotes it can be seen that IKEA is in the process of getting managers involved more in SKAPA's adoption. The next step would be “to address these different target groups individually”(Fanny, Senior Design Systems Designer, IKEA Sweden), with an onboarding designed for and relevant to specifically managers such as POs and engineer developers. Several managers suggested developing a more self-guided and personalized onboarding through for example the use of AI. However, the challenges persist of reaching and identifying the right managers given IKEA's complex organizational culture and flat hierarchies. According to Fanny (Senior Design Systems Designer, IKEA Sweden), communication department is missing human resources to reach managers at the franchisees' offices. Furthermore, several managers and designers shared to not always have enough time to dedicate to SKAPA onboardings, which comes from IKEA's complex organizational structure creating overlapping responsibilities, and thus more work for teams.

Moreover, according to managers and designers from the US and China the onboardings are more accessible to employees working at IKEA Sweden, and employees from Franchisees' offices outside of Sweden are less of a priority, which poses a problem to SKAPA's adoption across the whole organization. Onboardings are usually scheduled according to the European time zone and often have to be requested specifically for other time zones resulting in people not being able to attend.

“Onboarding have been a big pain point in the team [a colleague of mine has been] invited to a meeting at 3AM” (Helena, Senior Product Designer, IKEA US)

“I never received a SKAPA training” (Josephine, Product UX Designer, IKEA Sweden)

Fanny (Senior Design Systems Designer, IKEA Sweden) suggested to allocate specific “SKAPA ambassadors” (SKAPA manager) to each Franchisee which would facilitate the collaboration around SKAPA between IKEA Sweden and its franchisees outside of Sweden. However, currently the IKEA communication team does not have enough time nor human resources to implement such a strategy.

Overall, according to theory having the right user attitude and skills base together with good leadership, IT-friendly environment and good communication can have positive influence on

the SKAPA's adoption (Yusof et al. 2007). However, IKEA's complex organizational structure, lack of leadership, inability to collaborate, misalignment of SKAPA's perceived purpose, and inadequate user training rather negatively influence SKAPA's adoption across the whole organization.

6. Conclusion

The aim of this thesis was to explore the role a design system can play within the digital transformation of retailers. Specifically, it investigated the design system SKAPA within the multinational retailer IKEA by conducting qualitative interviews with both managers and designers. It utilized the dynamic capabilities approach, particularly looking at the concept of digital maturity to understand how a design system can be utilized to face emerging challenges within the retail environment. Additionally, the notion of humans as enablers of digital transformation and the adoption of the design system were explored. Drawing from the findings highlighted in the previous chapter, this section will now specifically answer both research question and highlight the contributions that this thesis offers to existing academic literature, as well as practical implications.

6.1 Answering the research questions

Firstly, we will answer the question: *How can a design system like SKAPA contribute to IKEA's digital transformation?*

The table below summarizes the findings that are specifically to SKAPA and IKEA. Drawing from these findings, larger assumptions about the role of design systems for retailers were made, which are stated below the table.

How can a design system like SKAPA contribute to IKEA's digital transformation?	
SKAPA as a digital tool	Design system as an internal tool for creative teams, aiming to create coherent digital experiences and expressing the IKEA identity online. SKAPA is providing components and guidelines based on IKEA brand which is accompanied by community and services offered by SKAPA team.
SKAPA as part of IKEAs dynamic capabilities facing challenges of digital transformation	SKAPA offers efficiency: it is saving resources e.g. costs, time and mind-space that can be used otherwise, allows to build higher quality products, focus on specific consumer needs instead of repetitive work; enabling rapid prototyping and faster iterations, allowing testing of solutions and getting feedback; better collaboration and communication across the organization, breaking down silos and creating coherency; enhancing other resourced and capabilities e.g. by empowering coworkers to better fulfill their tasks or strengthening the brand.

SKAPA contribution to IKEAs effort to offer an omnichannel experience	Standardizing the expression of the brand online, unified brand experience across channels, supporting humans across the company fulfilling their tasks better, potential for physical channels as well
SKAPA's and IKEA's path to digital maturity	SKAPA is a digital tool that is directly impacting the goals of IKEA's digital and overall business strategy. Sign of digital maturity and attractive for designers joining the company.

Table 7: Conclusion RQ1, specific to IKEA and SKAPA

The findings revealed that the role of design systems like SKAPA stretches beyond simply being a tool for designers, who want to standardize their design process. Instead, the design system has been identified as a strong capability that is interrelated with the organizations other resources and capabilities, thereby acting as a facilitator. More specifically, a design system can empower coworkers at retail companies such as IKEA, while simultaneously strengthening the brand and breaking down silos across the organization. Apart from that it contributes to saving resources and optimizing internal processes, which is crucial to the overall efficiency of the company. Together, the design system and these capabilities provide retailers with the ability to better navigate the challenges or digital transformation, adapt faster to changes in their environment and meet emerging customer needs. Especially retailers who want to implement an omnichannel experience can benefit from a design system, both regarding digital channels, but also within the emergence of digital components in physical channels and products. A great example here are screens both in stores, as well as on products, whose contents can be designed using a design system to express a coherent brand and create a more seamless customer experience across all channels. At the same time, the findings highlight, that the adoption of a design system is part of retailers' path to digital maturity, allowing them to use digital technologies to optimize their business model and value-creation activities. Ultimately, a design system contributes to fulfilling strategic goals, impacting both digital transformation of the retailer, as well as economic performance and competitiveness in the market. This suggest that the implementation of a design system can be beneficial for retailers, positively impacting their ability to face challenges of digital transformation in a fast-paced retail environment.

At the same time, the interviews revealed a number of factors preventing a design system from fully utilizing its benefits. Most importantly, this refers to a lack of adoption, which is impacted by human factors, a company's digital culture, as well as the need for facilitation by leadership.

This underlines the importance of answering the second research question: *What role can a design system's stakeholders, such as managers and designers, play for the digital transformation of IKEA?*

Again, the table below summarizes the findings specifically to SKAPA and the more general findings are stated below

What role can a design system's stakeholders, such as managers and designers, play for the digital transformation of IKEA?	
Increase awareness about SKAPA and benefits among relevant stakeholders.	Sell SKAPA to stakeholders by highlighting relevant benefits to each stakeholder group, raise awareness about & allow access to SKAPA across functions; lack of awareness on team management level and on the commercial and business side, allocate SKAPA ambassadors in different markets.
Push-down approach to SKAPA: Targeting POs, engineering managers and potentially higher managers	SKAPA needs to be pushed down, top-down approach to implementing and selling SKAPA. Raise managers' interest in SKAPA, communicate relevant benefits, managers should make using SKAPA a priority in their teams, allow designers to allocate time for using SKAPA and engage in community. Important for SKAPA to have sponsors - be anchored in higher level of hierarchy.
Optimize onboarding	Create an overall smoother onboarding process, more individualized approach needed, self-guided based on previous experience, utilize technology e.g., AI to simplify & personalize onboardings; Target different onboardings to individual stakeholder groups (e.g. team managers) and adapt message more specific to their needs.
Improve service and community	Increase collaboration and grow community, being more inclusive and inviting towards other markets (US / China). The SKAPA community has to grow so SKAPA is adopted by employees from other departments and franchisees. Need for more contributions from the teams feeding into the design system
Improve components and system itself to fit user needs.	allow more flexible options to customize and adapt components to user scenarios. SKAPA expression will evolve so SKAPA will fit more user contexts & markets; improve SKAPA website/SKAPA hub, provide information in a clearer and more intuitive way
Provide more resources to the internal communication team	As SKAPA will be used by more departments, internal communication will require more targeted initiatives & resources to address various stakeholders.
Communicate plans for SKAPAs future	SKAPA team has awareness of most current pain points, should communicate this to prevent frustration, be open about "Roadmap" for SKAPA.

Table 8: Conclusion RQ2, specific to IKEA and SKAPA

Overall, the findings of this thesis highlight the way in which humans, culture, leadership, processes and structure impact the adoption of design systems. Linked to digital maturity, the findings revealed that the adoption of a design system across the whole organization should be a priority to ensure the success of the system, but also achieve digital transformation of the company.

Humans act as enablers of adoption, as their curiosity and investment can encourage them to engage with the system and share their excitement with others, directly impacting the adoption of their coworkers. Here, a sense of community around the system was identified to both positively increase adoption, as well as the overall involvement of the system, which benefits from feedback from its users. Furthermore, having a digital culture, that is supporting innovation and experimentation allows for better adoption of new technology, because culture directly affects the mindsets and actions of people across the company. At the same time, management and leadership have the power to push the system down onto the different departments and teams across of the organizations. Overall, their actions and support of the system can further engage users to adopt new digital tool. Overall, the thesis highlights how the individual characteristics of a retailer can impact adoption of design systems. While a complex organizational structure might make it more difficult to identify and reach relevant stakeholders, culture and management can positively impact adoption.

Another important aspect of adoption is the perceived purpose of a design system. The retailer should make sure that employees in different parts of the organization, get the right perception of the system. Making sure that the different stakeholder understand the benefits of the system is a crucial part of increasing adoption. Here the findings clearly indicate that the communication around the benefits should be targeted towards the individual stakeholder groups. While designers care about benefits like standardizing repetitive tasks, following brand guidelines more easily, ensuring consistency, as well as being able to focus on individual needs and testing solutions fast, POs and managers are more concerned with benefits like efficiency, saving resources and being cost-effective. Therefore, the internal communication promoting the design system should be adapted accordingly.

Furthermore, onboarding plays a crucial role for the adoption process because users need to get familiar with the system. Here, the findings highlight, that user training in the form of onboarding plays a crucial role, as it is often the first impression and interaction that users have with the system and thereby can affect their overall perception and attitude towards the system. Therefore, offering engaging onboarding and highlighting relevant benefits to best sell the system to the relevant users, are factor that heavily shape the adoption of design systems.

The findings also revealed that designers perceive companies having design systems as a positive factor when looking for an employer. This means that it can be utilized within employer branding and could already be communicated in the job postings. At the same time, communicating that the design processes within the company are based on a design system early on sets the expectations for designers coming into the company and lays the groundwork for their onboarding and adoption of the system.

Overall, this thesis highlights the role that adoption of new technologies has for the digital transformation within the retail industry. It underlines the role of humans and their interactions as enablers of adoption of design systems, while also suggesting that different stakeholder should be addressed through targeted initiatives, highlighting the benefits most relevant for them.

6.2 Contribution to academics

The biggest contribution this thesis makes to academic literature, is extending the academic conversation about design systems. As stated before, design systems are a fairly new stream of literature with still few contributors. Therefore, this thesis contributes to defining design systems, aiming to provide a better understanding of their benefits, implementation, and the impact they have on organizations. Previously, design systems have not been connected to digital transformation, nor specifically the retail industry. Therefore, basing the research in a specific industry and connecting the concept of design systems to dynamic capabilities is a new approach.

The findings confirm the view of design systems as tools, who help designers and developers by offering standardized components for their design process. The need for a design system to understand and meet the needs of its users, while evolving over time. Here, the findings showed that within a multinational retailer, a design system must cover a variety of user scenarios, as well as different country markets, who sometimes exhibit cultural design preferences. Here, a clash between offering a standardized, on-brand component and the needs of the specific design or user can occur. In the case of SKAPA, this has been addressed through offering subsystems and planning to offer more diverse options of expressions for the individual components, allowing them to adapt more to their user scenario, while still reflecting the brand.

Furthermore, this thesis adds to research around design systems, by extending the perspective from an external to a more internal view. While several researchers and practitioners address the benefits that streamlining design has for customer-facing channels and tools, something that has not been discussed when talking about design system, is the creation of coworker-facing digital tools and design. Here, the findings revealed that a design system can not only empower the designers working with it directly, but also the coworkers who are receiving better tools and solutions, based on the benefits of a design system. This relates both to coherency across different coworker tools in the organization, as well as meeting specific needs due to more efficient usage and distribution of resources.

Another area this thesis adds to, is adoption research. The adoption of new technology such as information systems has been studied by several researchers, identifying human, technological, organizational factors impacting adoption. At the same time, research surrounding adoption has never directly been applied to design systems before. Although there are similarities to information systems, the characteristics of a design system within the retail industry are distinct and therefore require their own consideration within adoption research. Here, this thesis branches out into a new field, connecting adoption of design systems with the retail industry within the theoretical framework of dynamic capabilities. The findings overall highlight the

role of humans in adoption, while also taking the role of leadership and the organizations culture into consideration. Furthermore, the interviews revealed community, as a new element to both positively increase overall involvement and adoption of the design system. This suggests that the human factors extend beyond only the direct users of the design system to other humans within the organization, as well as their relation to each other. Humans influence each other and directly impact adoption by pushing usage of the system down into lower hierarchical levels or simply encouraging co-workers to use the design system and become part of the community around it. Here, it would be interesting to see, to what extent these factors apply to other forms of technology.

Lastly, the thesis contributes to the body of literature concerned with digital transformation within the retail industry, utilizing the dynamic capabilities approach and the concept of digital maturity to understand how companies can use digital technologies, such as design systems, to face emerging challenges and stay competitive in a faced-paced, highly competitive environment. Here, the thesis underlines the relation between the different resources and capabilities, underlining the way in which technology can empower coworkers or strengthen the brand.

6.3 Managerial implications

This thesis contributes to understanding the benefits of a design system and can thereby help managers in their considerations to implement a design system. Furthermore, it offers guidance on how retailers can use design systems to optimize their design processes and value-creation activities. This especially relates to design of digital applications, both customer and coworker-facing, as well as collaboration and communication across the organization. In this context design systems enable faster prototyping, which can be a tool for better reacting to and meeting specific needs. The findings also highlight how a design system can save resources while simultaneously creating consistency and strengthening the brand. These insights are particularly relevant for retailers who aim to strengthen their digital channels and implement an omnichannel strategy.

At the same time, the findings reveal a number of factors, that retailers need to think about, when implementing such systems. It highlights how the culture and attitudes of leadership can prevent adoption and ultimately form barriers to a retailers digital transformation. Furthermore, the thesis highlights the role of selling the design system to its stakeholders across all hierarchy levels, by highlighting the ways that it can impact their daily work and the overall strategic goals of the company. Here, internal communication was identified as a driver of adoption. As multiple designers mentioned, working with a design system can be attractive for designers when looking for an employer, therefore the communication about the design system could be incorporated into outwards communication as well, raising awareness about the design systems already in job ads. This should be followed by raising awareness and providing guidance during the onboarding process.

Overall, this thesis highlights that a design system can be a powerful capability for a retailer. Using a design system can directly impact the strategic goals of a retailer, facilitate digital

transformation, and affect economic performance. Therefore, managers should look into the potential that implementing a design system has for their organization. However, the thesis also underlines that merely implementing a system is not sufficient, if it is not accompanied by activities that facilitate the adoption and correct usage of the system. Therefore, if a company decides to implement a design system, the process should be supported by a strategic plan on how to ensure adequate usage. Dedicating specific resources to this process is one option to make sure that they can actually utilize the benefits of the design system.

6.4 Limitations & Future Research

There are a few limitations to be addressed, which come from certain weaknesses in our research design and analysis.

First, using a single case study narrows down the field of research, and is thus limited to one single company and setting. Therefore, the findings are specific to IKEA. IKEA being a global retailer means that findings are less applicable to smaller sized firms. Also, IKEA's design system SKAPA is specific to IKEA's organizational structure, which also makes the findings less applicable to other design systems in other companies, structured differently.

Also, IKEA is a very complex and fragmented company. The Swedish headquarters (Ingka & Inter IKEA) are very united, but when it comes to other franchisees in other markets less so. It was not easy to reach employees in the US and China markets. We briefed our IKEA team by giving them our sampling criteria, which they in turn forwarded to their contacts in China and the US. It is these contacts that were then responsible to find employees in China and the US meeting our sampling criteria. Therefore, we cannot be certain if the best suited employees were recommended, since we did not have direct control over the sampling method, but had to rely on a "third party" to choose for us according to what we had briefed them.

Furthermore, time was limited in this research, and restricted the amount of primary data that was collected.

In addition, this research does not account for country specific cultural differences which might have influenced interview findings since it was not its purpose. For example, China has very different cultural standards than the US and Sweden which could also play a role in different user needs in the context of design systems, specifically SKAPA. It would also be interesting to research how cultural difference impact the management of digital transformation, looking at organizations and markets in different countries. Hofstede theory could be used in future research to explore the impact of cultural differences on the adoption of design systems and general management of digital transformation.

Based on the research conducted and the insights drawn from it, there are several other suggestions for future research. Firstly, it would be interesting to explore the role of perception and adoption of design systems in various industries, investigating if these study's findings are applicable there as well. It would also be interesting to take into account how the implementation of a design system takes place in established markets with already set structures and culture, compared to new, emerging markets. Theory on new market entries

could be used in the future to investigate this. Similar to this, looking specifically at the users of design systems, it would be interesting to look at the differences in the adoption between coworkers already working at the company when a design system is newly introduced, to the adoption among new hires. Furthermore, it would be a crucial next step to delve deeper into the differences in stakeholders' perception of a design system, this time also including developers or potential future stakeholders such as the commercial department. This would provide more guidance on which benefits are most important to each stakeholder and how the more targeted communication initiatives promoting the design system could look like.

Finally, it would also be interesting to use theory on community management to further explore how a design system's community can contribute to its adoption, which was a new variable found, not directly covered in the theory of this study.

Overall, design systems need to be considered more within academia, forming a body of literature dedicate to this specific form of technology. As more and more companies start implementing design systems, and practitioners are debating their benefits and ways to implement them effectively, having research available can provide crucial guidance to organizations across industries.

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Appendices

Appendix A – Interview schedules

Interview opening questions

Each interview will start with a short introduction/explanation of this research and its aim, followed by a few questions about consent. Then the interviewee will be asked to introduce itself (job title & main tasks) before starting the interview.

Research introduction & aim:

This research is about the digital transformation of retail. The overall aim of the thesis is to understand how SKAPA is utilized to aid the digital transformation of IKEA and the strategic goals connected to this. Within the topic of digital transformation, we specifically look at adoption of new digital technologies as the ultimate goal for retailers is to become digitally mature, meaning that employees should get familiar with digital tools and applications and this better than competitors. We build onto the adoption study that the SKAPA team has previously conducted. Their study has identified a need for more nuanced messages to increase the adoption of Skapa. They found that a "one way fits most" approach won't do, as SKAPA serves a wide range of digital products and teams. We aim to identify and remove issues that prevent teams from adopting Skapa.

Research consent questions:

- This interview will take approximately 40-60 minutes. We can ensure you that your identify (name, gender, age etc.) will stay confidential. However, we would like to use your job title to be able to better reason for the relevancy of this interview in our thesis. Is this okay with you?
- Also we would like to record this interview for data analysis purposes, is this okay with you? We can ensure that the recordings will stay confidential.

Opening question:

- Could you please introduce yourself by stating your job title and main tasks?
- Do you have any questions before we start?

Interview Group 1 – key questions

Dynamic capabilities:

- Connected to digital transformation, which are the biggest challenges, IKEA is facing at the moment?
- Looking at these challenges, which are IKEAs most important resources to overcome them?
- Which are IKEAS most important resources, when trying to become more digital/undergoing digital transformation?

SKAPA:

- What is the purpose of SKAPA? What are the capabilities (strengths/ resources) SKAPA is adding to IKEA?
- How can SKAPA help to optimize the use of IKEA's resources and competences? How do people use SKAPA most effectively? What skills/knowledge do they need?
- How can SKAPA play into the digital transformation of IKEA?

Culture & Technology:

- How would you describe IKEAs culture (in relation to supporting experimentation, change-making mindsets on overall innovation)?
- Which technological resources does IKEA use to become more digital?
- What role does information/knowledge management and effective flow of information play for IKEA? How do you make sure that new employees are onboarded to new technologies and get all necessary information to do their jobs?
- How can SKAPA play into this?

Digital Strategy:

- Does IKEA have a specific digital strategy? What are the goals of this strategy? What are enablers/barriers?
- How does IKEAs digital strategy align with the overall business strategy? How can IKEAs overall strategy generate results from implementing digital technologies?
- How can SKAPA play into this?

Interview Group 2 – key questions

User perception/ clarity of system purpose:

- What Is SKAPA/ How do you define SKAPA?
- What would you say is the purpose of SKAPA?
- How do you like using SKAPA, easy/difficult to use?

User involvement:

- How do you use SKAPA? What is your relation to SKAPA?
- How does SKAPA contribute to your resources, and skills? How does it help you or prevent you from fulfilling your tasks?
- Do you contribute to /participate in the SKAPA community? Seek 1-1, share components?
- Do you use SKAPA because you want to or must? Would you use it, even if it weren't mandatory?

User training:

- Did you have experience with working with design systems before?
- How was your experience of starting to use SKAPA? Was it easy to implement into your work flow?
- Did you receive proficient user training? Onboarding sufficient?

System quality, information quality, service quality:

- Does SKAPA fulfil your needs?
- Did/does SKAPA help you to gain knowledge and information about IKEA?
- What kind of information does SKAPA provide to you:
company/brand/design/identity?
- Which aspects would you want? How can SKAPA improve?

Digital maturity /structure/environment:

- How would you describe IKEA´s culture? Specifically related to supporting experimentation, change-making mindsets on overall innovation.
- How would you describe the digital maturity of IKEA? Is IKEA a digital company? Enough digital efforts, technology? Strategy?
- How would you describe the flow of information and knowledge within IKEA? Is it easy to get access to necessary information?

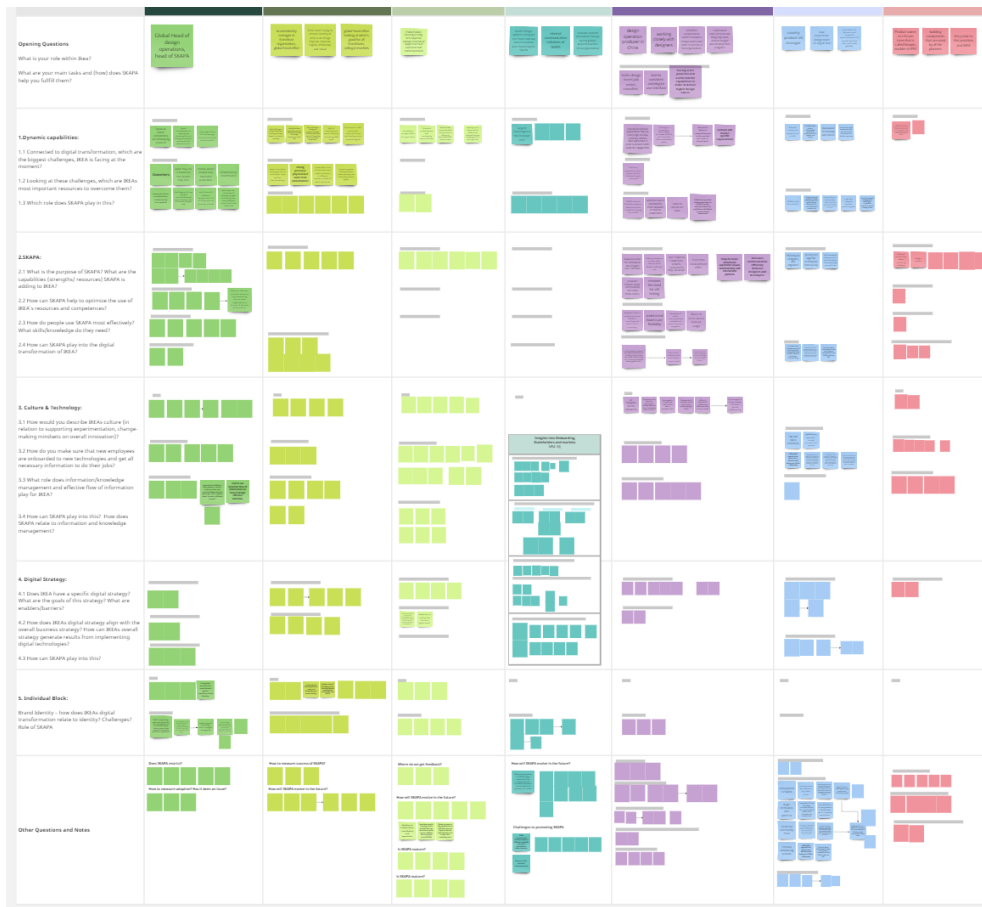
Appendix B – Coding through the Miro App

First round of coding

Description of codes created through Miro app:

- Interview question blocks are placed on the vertical axis
- Interviewee names are placed on the horizontal axis
- First round of codes created per interviewee question block on post-it notes, color coded according to interviewee.

Exhibit A.1: Example of manager’s interviews initial codes



Pattern coding

Description of second round of codes created through Miro app:

- Initial codes from interviewees are grouped together and given broader themes, this is done per question block.
- Broader themes are visible on yellow post-it notes

Exhibit B.1: Second round of coding of manager’s interviews (see framed section)

