Utilizing digitization within pre-purchase business customer experience management: an exploratory study

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Abstract
Digital utilization within customer experience management is critical in today's business. Rapidly increasing digital innovations greatly empower new standards of interaction between businesses and customers, causing extensive, complex, and digitally hybrid customer journeys for suppliers to manage, especially within the pre-purchase phase. In business-to-business (B2B) environments, suppliers seriously struggle in managing pre-purchase customer experiences, which are created through numerous touchpoints along the customer journey. As existing literature lacks an understanding in this field of research, the author of this paper aimed to develop a theory on how digitization can be utilized in pre-purchase customer experience management. To achieve this goal, explorative research using a qualitative approach was conducted to discover important touchpoints within the pre-purchase process of business services, exploit the relationship between digitization and customer experiences within the pre-purchase process, and unravel important supplier activities to stimulate customer experience management. The study uncovered several independent factors that could affect the pre-purchase process, nine important types of pre-purchase touchpoints, twelve distinct relationships between digital dimensions and the pre-purchase process, and thirteen supplier activities to bolster customer experience management in business service settings.

Keywords: Customer experience management, customer experience, digitization, pre-purchase process, business-to-business, knowledge-intensive-business-services

1. Introduction

Over the years, digitization has changed business around the globe. Daily interaction between customers and suppliers via numerous ways on the internet (e.g., email, websites, and social media) is the norm, causing digital marketing to be useful for influencing customer experiences more than ever (Pandey, Nayal, & Rathore, 2019). The phenomenon of perceiving strong positive customer experiences has become an important management objective recently (Lemon & Verhoef, 2016). Customer experience management is conceptualised as a multidimensional and complex phenomenon that aims to affect customers' cognitive (knowledge), affective (feelings), and conative (behavioural) responses by stimulants along the customer journey (Følstad & Kvale, 2018; Lemon & Verhoef, 2016). Multiple studies have shown that customer experience management enhances customer retention significantly to perceive sustainable competitive advantage (Edelman, 2010; Homburg, Jozic, & Kuehnl, 2017; Lemon & Verhoef, 2016; Jain, Aagja, & Bagdare, 2017). According to researchers, managing customer experience will be the most important marketing challenge of the upcoming years (Marketing Science Institute, 2016). However, digital technologies develop rapidly, causing many opportunities as well as complexities (Hamilton & Price, 2019).

Managing customer experience is an important and complex process. Customer experience management can be conceptualized as a strategy that engineers customer experience to create customer value different touchpoints and channels of the customer's journey (Verhoef, Lemon, & Parasuraman, 2009; Lemon & Verhoef, 2016). Despite its relevance in business-to-business (B2B) as well as business-to-consumer (B2C), far less studies exist on the customer experience management B2B contexts compared to B2C contexts. Its deficit is remarkable, as customer experience management in B2B contexts is far more complicated than in B2C contexts (Witell, Kowalkowkski, & Perks, 2020). Complications within B2B contexts compared to B2C contexts lie in the presence of multiple buying actors with various objectives reliant on their function, more complex offerings, and higher service provision (Altounian, Wiley, & Woo, 2016; Lemon & Verhoef, 2016; Sahhar, Loohuis, & Henseler, 2021). Ultimately, causing the presence of a theoretical gap between customer experience management in B2C contexts compared to B2B contexts.

Over the past years, customer experience management has evolved significantly as a result of digital technological developments. In B2B contexts, digital technological

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developments. In B2B contexts, digital technological developments such as the internet of things, social media, and mobile devices increasingly affect the customer journey and, therefore, customer experience management (Lemon & Verhoef, 2016). They lead to new ways of accessing and exchanging information (Hamilton & Price, 2019), causing the number of touchpoints and channels throughout the customer journey to ignite, which create new marketing opportunities and complexities for firms to challenge (Lemon & Verhoef, 2016; Sahhar et al., 2021; Van Doorn, Mende, & Noble, 2017). The existence of opportunities is inherently connected to challenges and complexities, as benefitting from opportunities such as multi-channel advertising and social media takes research efforts (Lemon & Verhoef, 2016). Next to that, novel touchpoints and channels along the customer journey have resulted in a decrease of direct control over customer experiences by firms (Ashman, Solomon, & Wolny, 2015; Lemon & Verhoef, 2016; Hamilton & price, 2019). Existing literature lacks a comprehensive understanding on how firms can manage customer experience in order to take back control. Hence, the current theoretical gap leaves practitioners with little support on how to influence customer experience, especially within the early stage of the customer journey.

The span of control over customer experiences by firms is especially problematic within the pre-purchasing phase of the customer journey, whereas new technologies allow customers and suppliers to interact far before a purchase via multiple devices and channels (Ashman et al., 2015). Technology enables customers to have one-sided anonymous interactions, hence, suppliers can be eliminated by a potential customer before they are even aware. Literature skims the surface of pre-purchasing phases of the customer journey by stating difficulties on influencing and controlling it. Still, recent digital technological developments in this phase of the customer journey are left out of the equation. Whereas B2C marketing literature addresses digital technologies in marketing such as big data analytics (Varnali, 2019), virtual reality (Hollebeek, Clark, & Andreassen, 2020), augmented reality (Romano, Sands, Pallant, 2020), and artificial intelligence (Kietzmann, Paschen, & Treen, 2018), investigation in B2B settings remain nearly untouched by literature. This is surprising because rapidly evolving technologies immanently affect B2B environments (Vieira, Almeida, & Agnihotri, 2019). It is important to understand these effects, as they leave firms without control over the pre-purchasing phase, cause ineffective marketing strategies, and, consequently, lead to waste of money and resources. Hence, this study aims to explore in what way digital technologies shape customer experiences across touchpoints in pre-purchasing phases. To reach this purpose, the following research question was created: *"How does digital technology affect customer experience across touchpoints within the pre-purchase process?"*.

This paper applies the perspective of a B2B service provider by proposing a case study on a Dutch business software service supplier. The case firm can be classified a so-called knowledge-intensive-business-service (KIBS) supplier. KIBS suppliers rely heavily upon professional knowledge to produce intermediary services for their customers' production processes, such as ICT services (Aarikka & Stenroos, 2012). Reasons for choosing this industry are embedded in the scant literature and little knowledge of other industries regarding KIBS providers. Hence, a foundation must be built before potentially expanding or generalizing the research to other types of KIBS markets.

Therefore, this study contemplates literature that touches B2B customer experience management in the pre-purchase phase of the customer journey by considering modern-day digitization. Subsequently, this paper proposes an inductive research strategy, which implies the development of a theory based on patterns found within the retrieved data (Bernard, 2017). This strategy is chosen, as it facilitates explorative research better than a deductive research strategy. Within the inductive research strategy, this study uses a qualitative approach, which includes the collection, analysis, and interpretation of non-numerical data (Denzin & Lincoln, 2011). The reason for choosing a qualitative approach is because qualitative data is concerned with understanding human behaviour, which is the aim of this study. The qualitative data is collected by consulting primary and secondary data sources. Primary data will be collected via in-depth interviews with customers of the case firm. Secondary data will be collected by reviewing the literature of fellow scholars and researchers.

The study contributes to theory and practice in five ways. Firstly, this paper contributes to the theoretical and practical understanding of customer experience management in a KIBS market, which is inadequately investigated by existing research (e.g., Lemon & Verhoef, 2016; Homburg et al., 2017). While existing literature mainly addresses B2C contexts and product suppliers, this paper addresses the B2B service context. Secondly, this paper contributes to the literature by focussing on the pre-purchasing phase of the customer journey. Due to digital technological developments in business, firms have lost control of pre-purchasing touchpoints and channels in the customer journey. Former literature acknowledges the loss of control by firms (e.g., Hamilton & Price, 2019) but fails to give a comprehensive understanding of what firms can do to get back control. This paper will address the lack of understanding by describing a modern-day perspective on how firms should manage the pre-purchasing phase. Third, the research approach for studying customer experience is a case study firm that acts within the business software service industry, which deepens the existing knowledge and understanding (in for example (Sahhar et al., 2021) and (Kumar, Umashankar, & Kim, 2014)) of customer service experience management within KIBS industries. Fourth, this paper contributes by providing practical implications specifically for KIBS industries, which has not done before. Specific implications will be given on customer experience management throughout the customer journey's pre-purchase phase applicable to KIBS industries. Finally, this paper contributes to existing literature on customer experience management in general (from e.g., Lemon and

Verhoef (2016)), in B2B settings (from e.g., Zolkiewski et al. (2017)), and in KIBS settings (from e.g., Sahhar et al. (2021)).

The outline of this study consists of four chapters including the theoretical framework, research methodology, results, and the discussion and conclusion. The theoretical framework section will discuss relevant literature and theories used in this paper. The research methodology section will highlight the appropriate methods for this research to collect relevant data. The result section will discuss the results obtained from the analysis of the data, followed by the last section, where managerial implications, limitations, future research areas, and conclusions will be described.

2. Theoretical Framework

In this section, the theoretical foundations of four main topics will be described to form a conceptual framework that summarizes the core elements of the study in one figure. The first subsection will define the concept of customer experience and customer experience management. Second, the customer journey will be reviewed in general and in B2B contexts. The final subsection will investigate the management of B2B customer experience in the pre-purchasing phases of the customer journey.

2.1 Customer Experience

The definition of customer experience originates way back to Abbott's (1955) belief that people do not desire products but satisfying experiences. Much later, this belief was embraced in marketing practice by Pine and Gilmore (1995), stating that purchases are experiences on which customers spend time enjoying. Over time, various marketing literature has evolved the concept of customer experience by adding various dimensions and perspectives, causing customer experience to be considered a multidimensional and holistic concept (Lemon & Verhoef, 2016; Zolkiewski et al., 2017; Jain et al., 2017). Classic marketing literature defines customer experience as a customer's cognitive, behavioural, sensorial, and social responses to a business' offerings during the customer journey (Lemon & Verhoef, 2016). In essence, scholars show similarities in the concept of customer experience (Verhoef et al., 2009; Homburg et al., 2017; Jain et al., 2017). However, researchers state that customers are interpretive and vary in interests, suggesting that customer experiences are highly contextual determined (Vargo & Lush, 2016; Grönroos & Gummerus, 2014; Zeithaml et al., 2020).

The main contextual determination on the concept of customer experience is drawn by the nature of the customer. As significant differences exist between individual consumers (B2C) and businesses (B2B), researchers define different conceptualizations. B2B contexts differ significantly from B2C contexts in many ways. For example, B2B offerings are often more complex in B2B contexts, which causes the quantity and complexity of interactions between business customers and business suppliers to increase (Holmlund, 2004). This results in B2B buying parties often using a decision-making unit (DMU) consisting of multiple actors, having different roles (buyer, user, gatekeeper, etc.) and act in different stages of the customer journey (Mikolon, Kolberg, & Haumann, 2015). Next to that, buyers are not necessarily end-users, and high service provisions are desired (Altounian et al., 2016; Lemon & Verhoef, 2016; Zolkiewski et al., 2017; Witell et al., 2020). Also, unlike B2C experiences, B2B experiences are not thrilling experiences, but should rather be trouble-free and reassuring (Meyer & Schwager, 2007). Furthermore, other scholars stress the importance of defining the research tradition, which implies the view on the concept of customer experience. To elaborate, customer experience can be viewed as a response to managerial stimuli or as a response to customer processes (Becker & Jaakkola, 2020). According to their study, scholars should consider and define these assumptions to extend research within the research domain.

In this paper, the perspective of a KIBS provider is studied. However, marketing literature does not describe distinct definitions for B2B service customer experience. Separately, B2B literature defines customer experiences as a multi-dimensional concept encompassing responses to all interactions customers have with firms and other external actors including other customers, intermediaries, and wider network actors (Zolkiewski et al., 2017). Service literature defines customer experience as a customer's cognitive, affective, emotional, social, and physical responses to any direct or indirect contact with the service provider across multiple touchpoints along the entire customer journey (McColl-Kennedy et al., 2015). This paper adopts a combination of both conceptualizations, as both definitions apply to this study. Furthermore, this study adopts the perspective of customer experience to be the response of managerial stimuli. Therefore, in this paper, customer experience is conceptualized as the customer responses (cognitive, affective, emotional, social, and physical) of direct or indirect (via other customers, intermediaries, and network partners) interactions between customers and KIBS providers as a cause of managerial stimuli across touchpoints along the customer journey.

2.2 Customer Experience Management

Management of customer experiences is an important and complex challenge studied widely in marketing literature. Researchers consider it to be essential for supporting positive and desirable experiences to perceive customer satisfaction, customer retention and trust (Lemon & Verhoef, 2016; Jain et al., 2017; Homburg et al., 2017). Subsequently, these achievements result in the enhancement of business performances, such as brand awareness, return on investment, value creation and many more (Pandey et al., 2020). Existing literature on conceptualizing customer experience management shows distinct conceptualizations in B2C and B2B contexts.

In B2C literature, researchers conceptualize customer experience management as a strategy that engineers customer experience to create customer value that stimulates the firm value (Verhoef et al., 2009). Other B2C literature defines cultural mindsets, strategic directions, and

firm capabilities for the continuous renewal of customer experiences (Homburg et al., 2017). Amongst others, these two conceptualizations of B2C customer experience management focus mainly on firms' advantages. In B2B literature, customer experience management is defined as a strategic, dynamic and co-creation-oriented approach for understanding touchpoints, value creation, discrete emotions, and cognitive responses (Zolkiewski et al., 2017; McColl-Kennedy, Zaki, & Lemon, 2019). Moreover, other researchers define a formal nomenclature consisting of three overarching building blocks: touchpoints, context, and qualities (TCQ) (De Keyser, Verleye, & Lemon, 2020). Whilst these mentioned definitions describe B2B eligible conceptualizations, other scholars are even more specific and define customer experience management in a business service context as systematically identifying, prioritizing, and incorporating the right clues at touchpoints across all stages by designing and developing interactive processes for experience creation and measuring customer responses (Jain et al., 2017). Nevertheless, the TCQ nomenclature provides a helpful structural foundation for approaching customer experience management. This paper, therefore, will consider the combination of TCQ nomenclature and the definition of customer experience management within business service contexts as the main foothold in this study, as one provides structure and the other addresses the contextual specificness of this study's purpose.

Identifying and prioritizing important touchpoints is essential for managing customer experiences. Scholars consider them to be "the moments that matter" (Lemon & Verhoef 2016, p.85), because at these interaction moments firms have the possibility to stimulate functional and emotional clues to perceive desirable customer responses (Lemon & Verhoef, 2016; Jain et al., 2017; Zolkiewski et al., 2017). In general, studies show very similar conceptualizations of touchpoints. Some conceptualize touchpoints as interactions between every person or message from an organization and a (potential) customer at distinct points in time, communicating something positive or negative about the organization (Homburg et al., 2017; Lemon & Verhoef, 2016). Others define touchpoints as any situation that a customer comes in contact with a brand or company (Jain et al., 2017).

Although many conceptualizations refer to the same contact or interaction moments between customers and firms or brands, existing literature defines different classifications of touchpoints. For example, in B2C contexts, Baxendale, Macdonald, and Wilson (2015) identify four distinct touchpoints: brand-owned, partner-owned, customer-owned, and social/external owned. Moving to B2B literature, scholars define customer-controlled, supplier-controlled, partner-controlled, external ecosystem actor-controlled touchpoints (Homburg et al., 2017; Witell et al., 2020). As is shown, B2B literature shows a wider range of touchpoints classification. Researchers state that differences are caused by higher complexities in B2B that require more interactions between front- and back-offices across firms and partner firms (Zolkiewski et al., 2017). In line with the case study of this paper, the touchpoints classifications as described by Homburg et al. (2017) and Witell et al. (2020) will be adopted in this study. It provides a framework for identifying and prioritizing different types of touchpoints, that contributes to the investigation of what touchpoints shape customer experiences in B2B service contexts. Jointly, all touchpoints between a certain customer and a firm, product, or brand shape the customer journey (Lemon & Verhoef, 2016). According to various studies, mapping the customer journey's touchpoints should be strongly considered in the treatment of customer experience (Verhoef et al., 2009; Lemon and Verhoef, 2016; Witell et al., 2020). The following subsection will contain a further elaboration on the customer journey.

2.3 The Customer Journey

The customer journey is a frequently used tool by academics and practitioners for managing customer experiences (Lemon & Verhoef, 2016). Scholars define the customer journey as a series of controllable and uncontrollable customer touchpoints before, during, and after a purchase (Richardson, 2010; Lemon & Verhoef, 2016). It includes events and phases, intended or not, that customers experience in their contact moments with suppliers (Lemon & Verhoef, 2016; Følstad & Kvale, 2018). Mapping touchpoints along the customer journey provides a strong foothold for firms to manage customer experiences. However, like the concept of customer experience, customer journeys are also contextually determined (Lemon & Verhoef, 2016).

In general, many studies define three distinct main stages within the customer journey. Lemon and Verhoef (2016) have empirically examined the overall stages over time and describe the pre-purchase phase, purchase phase, and post-purchase phase (Lemon & Verhoef, 2016). However, several other papers that study specific business contexts come up with some different descriptions. For example, researchers in service-oriented business contexts believe that customer experience is a value creation process and define three value-creation stages: the pre-use stage, the use stage, and the post-use stage (Jain et al., 2017; Sahhar, Loohuis, & Henseler, 2019). Next to that, other scholars define pre-service, service, and post-service periods (Rosenbaum, Otalora, & Ramírez, 2017). Although the listings differ, their time-based perspectives all have the same structure. To explain, all first stages address the period before the purchase, all second stages address the actual purchase, and all third stages address the period after the purchase. As the scope of this study is specified to a B2B service-oriented business context, this paper will adopt the three value-creation stages described by Jain et al. (2017).

The 'pre-use' stage is the first stage and refers to the pre-purchase stage in which customers become familiar with the product, acquire knowledge, develop an understanding, and if possible, try the product of service before the actual purchase (Jain et al., 2017). In this stage, customers shape their perceptions and formations of attitudes which are instrumental in decision making. This phase will be elaborated specifically in the next subsection, as it is the main focus of this study. The 'use' stage is the

second stage and refers to the actual consumption of services or goods. It relates to experiences during the purchase, such as transaction at the point of sale, payments and billing, the delivery of goods, and the consumption of the goods or services (Jain et al., 2017). In service-oriented business contexts, this phase is considered to be the most important phase as the use of a service (a process) serves the fundamental basis of exchange and source of competitive advantage. The third and final value creation stage is the 'post-use' stage. The phase refers to the value creation after the consumption and relates to exchange or returns, repairs and maintenance, up-gradation or buy-back, handling complaints and feedback, loyalty programmes, customer communities, and managing regular communication with all customers (Jain et al., 2017). From a business perspective, firms must try to create value through touchpoints in all three stages to perceive and benefit from desirable customer experiences.

Researchers state that intrinsic disparities between different main stages cause different problems and ask for different treatments, suggesting that customer experience management requires a multi-disciplinary approach (Wolny & Charoensuksai, 2014; Santana, Thomas, & Morwitz, 2020). This paper responds to these verdicts by focussing on the pre-purchase stages of the customer journey and addressing its problematic loss of control by B2B service-oriented firms.

Classic marketing literature on customer experience management in pre-purchasing stages is scarce, let alone pre-purchasing stages in B2B service contexts. Lemon and Verhoef (2016) and Ashman et al. (2015) conceptualize the pre-purchase stage of a customer journey based on the EKB customer decision-making model from Engel, Kollat, and Blackwell, which contains three steps: need recognition, information search, and evaluation of alternatives. The three steps derived from the EKB model are clear and concrete, but not addressed to a specific context. When looking to a more specific conceptualization that aligns with this case study, researchers propose a distinct set of steps in a B2B service context. They conceptualize the pre-use stage in four stages: trigger & problem analysis, orientation & negotiation, and choice (Sahhar et al., 2019). In general, both conceptualizations show large similarities and both conceptualizations could be used. However, the contextual research area from Sahhar et al. (2019) is highly aligned with this research's purpose. Therefore, this study will consider trigger and problem analysis, orientation, negotiation, and choice as a foothold for pre-use steps of a B2B service providers' customer journey.

2.4 The Customer Journey

Over the years, digital technologies have changed the holistic nature of business. New technologies have created many different channels for customers to interact with a product or service provider (Court, Elzinga, &, Mulder, 2009; Edelman & Singer, 2015; Li & Kannan, 2017), causing significant control on how customers interact with providers (Lemon & Verhoef, 2016). Also, barriers to information exchange have dissolved, causing customers and suppliers in both B2C and B2B to interact on a daily basis via different channels such as email, social media, websites, and more (Ashman et al., 2015). Both allow customers and suppliers to interact far before and after a purchase (Ashman et al., 2015), i.e., in pre-use and post-use stages. The control of customers increases the complexity for firms to influence and control customers effectively. Nevertheless, new digital technologies also bring opportunities for firms to better control customer experience in the pre-purchasing phase of the customer journey. However, literature lacks an understanding on the topic in such early stages of the customer journey.

Managing customer experiences in pre-purchasing stages of the customer journey is an important step to perceive desirable customer responses. As conceptualized in section 2.1, the nature of customer responses can be cognitive, affective, emotional, social, and physical. Research lacks investigation of what customer responses should be pursued in B2B pre-purchasing phases (trigger and problem analysis, orientation, negotiation, and choice); let alone through what technologies they can be managed. Various studies address digital technologies used in marketing. However, over time and in different contexts, digital technologies applicable in marketing vary significantly. Kotane, Znotina, and Hushko (2019) found that, in general, the top-rated digital marketing technologies in 2019 were content marketing, big data, artificial intelligence and machine learning, marketing automation, conversion rate optimisation and website experience, social media marketing, and mobile marketing (Kotane et al., 2019).

Whereas researchers mainly study digital marketing technologies in B2C contexts, literature on digital marketing technologies in B2B contexts remains scarce (Panday et al., 2020), let alone literature specified on B2B pre-using stages. Within B2C literature, researchers address a wide range of digital marketing technologies applicable in B2C such as search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, e-commerce marketing, campaign marketing, and social media marketing, social media optimization, e-mail direct marketing, display advertising, eBooks, optical disks, and games (Bala & Verma, 2018). Panday et al. (2020) conclude that digital marketing in the field of B2B is still in its embryonic state. Therefore, they proposed a framework on digital marketing orientation in B2B contexts that consists of digital marketing capabilities (including social media capability, content marketing, adverting, and blogging) and analytics and technology adoption (including web analytics, social media monitoring, machine learning, mobile technology adoption). Although their study provides great input on B2B literature, its applicability on different touchpoints and stages throughout the customer journey remains untouched.

When scanning marketing literature, exhaustive lists of digital marketing technologies can be found. Most measures can be classified within the 5Ds of digital marketing, which contributes to the manageability of the analysis. The 5Ds of digital marketing includes digital devices, digital platforms, digital media, digital data, digital

technology (Chaffey & Ellis-Chadwick, 2019). Digital devices help potential customers and suppliers to interact via devices such as mobile phones, television, computers, and gaming devices. Digital platforms can be understood as applications and browsers such as Google, LinkedIn, Facebook, YouTube, and Twitter that work as a medium to create interactions between potential customers and suppliers. Digital media refers to paid and owned communication channels that help to build customer engagement. Communication via advertising emails, search engines, social networks, and messaging are examples of these digital media. Digital data consists of the collection and usage of data in enhancing engagement patterns between customers and suppliers. Possible digital data collection tools are Google Analytics, surveys, and contests. Digital technology entails electronic tools, systems, and resources such as artificial intelligence, cloud computing, virtual reality, augmented reality, mixed reality, extended reality, and the Internet of Things that build interactive customer experiences.

Overall, combinations of existing literature can propose an initial framework on how digital technologies can stimulate B2B customer experience. However, literature lacks investigation of its effects and applicability across touchpoints within pre-purchasing phases of the customer journey. Therefore, this paper will explore the potential effects of the five digital marketing technologies on the customer responses from McColl-Kennedy et al. (2015) across touchpoints through the pre-purchasing stages of Sahhar et al. (2019). To clarify this purpose, a visualization of the conceptual framework is displayed in figure 1.

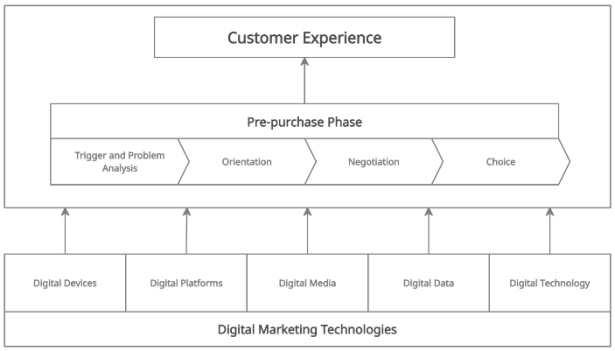

Figure 1. Conceptual Framework

3. Methodology

The methodology section will contain elaborations on the research method that is used in this paper. It includes five subsections covering the research design, unit of analysis and unit of observation, data collection, and data analysis.

3.1 Research Design

This study aims to intensively explore the customer experience of B2B service customers in the pre-purchasing stages of the customer journey and propose a framework for management purposes. For these objectives, the following research question was created: "*How does digital technology affect customer experience across touchpoints within the pre-purchase process?".* The research question will be investigated from the perspective of a B2B service supplier. To structurally explore the formulated research question, three sub-questions were created:

1. *What touchpoints do customers use in the pre-purchase process of business services?*

2. *How does digital technology affect customer experiences in the pre-purchase process?*

3. *How can KIBS providers use digital technology to positively stimulate customer experiences across touchpoints in the pre-purchase process?*

The first sub-question is a descriptive research question that will describe what touchpoints customers use in the pre-purchase process of business services. An inductive approach will be used to investigate this research question. It means that broad generalizations are made from specific observations (Hodkinson, 2008). The second sub-question is an explorative question by nature and explores the relationship between digital technologies and customer experience in the pre-purchase process. The third and final sub-question is also an explorative research question and explores how KIBS providers can use digital technologies to positively influence customer experiences across pre-purchasing touchpoints.

To empirically explore the aforementioned research questions, this study uses a case study. A case study entails research aimed at answering a research question about a single unit of analysis or a single setting (Zainal, 2007). This study addresses the business software service sector, which is an incredibly complex sector. The setting consists of business software service providing firms and business software service buying firms. Its complexities in products, DMUs, and high service provisions ensure highly interesting data to be discovered. Business software services can be considered as knowledge-intensive-business-services (KIBS) (Sahhar et al., 2019), and can therefore potentially be applied to other close related KIBS sectors.

3.2 Units of Analysis and Observation

This study investigates how digitization can be utilized to stimulate customers experiences within the pre-purchase process of knowledge-intensive-business-services (KIBS). To perceive a better understanding of this research question, this section clarifies the units of analysis and the units of observation. The units of analysis entail the major entity that is analysed in a study (Earl, 2011). The major entity that is analysed in this study is the knowledge-intensive-business-service (KIBS) customer. This unit is studied through other units, which are called the units of observation. The units of observation are the objects on which information is collected, which helps to clarify reasonable conclusions on the units of analysis (Lavrakas, 2008). In this study, information from I&A managers and IT managers from KIBS buying organisations is collected, who, therefore, are the units of observation in this study.

3.3 Data Collection

This study aims to propose a theory on how digital technology can be utilized to stimulate customer experiences of KIBS customers within the pre-purchase process. To investigate this research question, data needs to be collected, which can be done via a qualitative approach, a quantitative approach, or a mixed approach. Qualitative research approaches entail the process of collecting, analysing, and interpreting non-numerical data (Denzin & Lincoln, 1994). A quantitative approach can be defined as a systematic analysis of numerical data (Creswell, 2003). As this study is explorative by nature and little is known on the topic, this research will adopt a qualitative research approach. Also, this study aims to investigate the behaviour, opinions, thoughts, and feelings of KIBS customers, which can be described better through non-numerical data than through numerical data.

In qualitative research, different data collection methods exist such as open-ended surveys, interviews, focus groups, and direct observations. Because this study requires opinions, thoughts, and feelings from business customers, in-depth interviews are a suitable method for collecting data. Conducting in-depth interviews is a data collection technique in which non-standardized questions are asked and interview topics and probes are used to study a sample from the units of observation. As a result, researchers can say something about the unit of analysis (Kvale, 1994). All interviews will be semi-structured and will follow the same prepared interview protocol, which is displayed in appendix I. It helps to structurally address all three sub-questions and have the possibility to ask follow-up questions to gain more valuable and unexpected data. Next to that, the interviews will be held digitally via videocall services such as Microsoft Teams and Skype. To ensure high-quality interviews, several measures are used that increase the quality of in-depth interviews, such as an interview format, expansive questions, probes and prompts, and have genuine care, concern, and interest for the interviewee (Jacob & Furgerson, 2012). Also, the interviews will be recorded for transcription purposes, which will help to interpret the data better. For ethical purposes, interviewees will be asked for recording approval and the transcriptions will be anonymised.

As the unit of observation, I&A managers and IT managers from KIBS buying organisations, cannot be questioned entirely, a smaller set of units will be questioned. To select a smaller set of units, a non-probability sampling method of purposive sampling is used. In non-probability sampling, the probability that a specific unit from the sampling frame is included in the study not known, whereas in probability sampling it is known (Goodman & Kish, 1950). This may cause a sampling bias or a sampling error. By using grounded sampling methods such as purposive sampling, sampling biases and errors are reduced.

The sampling process of this study starts with defining the population followed by a sampling frame, sample, studied units, and data on studied units. The population of this study contains all KIBS customers. KIBS customers are organisations by nature but are, when acting as customers, represented by organisation members. The case study firm within this study, which acts as a KIBS supplier, possesses a database of more than five thousand contact persons within the Netherlands. These persons have interacted with the case firm somewhere along the customer journey. This database will serve as the sampling frame. From this database, a purposive sample is drawn. In purposive sampling, the sample should contain participants that suit the purpose of the study (Etikan, Musa, & Alkassim, 2016). In this study, potential interesting participants are selected based on their membership in a DMU of KIBS buying firms. The number of participants is dependent on the research purposes. For theory building purposes, Creswell (1998) suggests that a sufficient number of participants lies between ten and thirty. However, ultimately, the required number of participants is also dependent on when data saturation is reached. Therefore, this study aims to have a sample with at least between ten and thirty participants. Simultaneously, data saturation is considered within the collected data.

3.4 Data Analysis

To perceive a detailed analysis of the collected data, the interviews were recorded, transcribed, and coded. The process of coding contains defining first cycle codes, categorize them in a smaller number of second cycle codes, and potentially further categorization into third and fourth cycle codes (Saldaña, 2013). Coding the transcripts is an important step, as wrong interpretations of the researchers could have a negative effect on the research quality. The input from theoretic coding methods could facilitate good and structured coding. In general, two types of coding approaches exist, which are inductive and deductive. The deductive coding approach is a top-down approach where you start with a predeveloped set of codes (codebook) to look for concepts and ideas. Inductive coding approaches the data with no prescriptive conceptualisations and thereby lets data speak for itself (Gibbs, 2007). Inductive coding is mainly used when little is known on the topic and exploratory research questions are used (Saldaña, 2013).

In this study, an inductive coding approach is used to analyse sub questions one and two, which means that the data will speak for itself. Sub question one is a descriptive research question and its aim is to find and describe important touchpoints within the pre-purchase process. To find and describe these important touchpoints open coding is used. Open coding is a process of identifying, categorizing, and describing responses that appear frequently within a data set (Salmons & Wilson, 2008). Sub question two is an explorative research question which aims to perceive an understanding on the effects of digital technologies on customer experiences in pre-purchase process. As little knowledge exists on this topic, open and axial coding were used to recognize and describe important patterns between the two variables. Axial coding is a process of relating data to reveal codes, categories, and subcategories (Allen, 2017).

4. Findings

This section presents the findings collected by qualitative research consisting of thirteen intensive semi-structured interviews, conducted with IT Managers and A&I Managers from large organisations with more than 250 FTEs. The findings respond to the three sub-questions formulated in section 3.1.

4.1 The Pre-purchase Process of KIBS

Findings regarding touchpoints throughout the pre-purchase process of software service customers are presented in this section. The retrieved data was gained from the respondents by showing them the pre-purchase process from Sahhar et al. (2019) and ask how the model reflects the practical experiences at their organisation. Subsequently, valuable insights were gained on the structure of the pre-purchase process, customer activities within the pre-purchase process, touchpoints, and stakeholders of the process. To structurally answer the first sub-question, findings on the topic are presented in four subsections followed by a sub-conclusion.

4.1.1 Structure of the Pre-purchase Process

Our findings show that, in line with pre-investigated theories, the pre-purchase process in a B2B customer journey is a multidimensional process in which multiple actors participate, different perspectives can be applied, and is contextually determined. In this study, the participants were asked to reflect their own experiences in pre-purchasing situations to the pre-purchase process from Sahhar et al. (2019). Initially, the participants responded contrastingly to the same question. Responses ranged affirmative *"I have passed examples that look comparable to the process you are showing" to* dissentient *"we start in the back".* However, follow-up questions revealed that the pre-purchase process structure is highly contextual determined.

It was found that different need triggers highly affect the pre-purchase process structure. Several different situations can be distilled from the data that trigger a software service need, such as a software service is end-of-life (EOL), a certain process needs optimization, or the market demands a certain innovation. Table 1 shows three clear quotes that describe the different situations that can trigger software service needs. By zooming in on the different need triggers, it was found that different triggers cause different types of buying situations. The literature describes three distinct types of buying situations, namely straight rebuys, modified rebuys, and new tasks (Doyle, Woodside, & Michell, 1979). To elaborate, the EOL software services trigger causes a situation in which the same supplier replaces old solutions with modern solutions. Such situations can be classified as straight or modified rebuys, depending on the extent of modifications. In situations such as process optimizations and market demands, customers look for new solutions which are typical for new task buying situations. Following the data, it was found that different buying situations can cause great disorder in the pre-purchase process of business software services.

Table 1. Examples that trigger KIBS needs

Quotes	Triggers
"When you are performing a new purchase, you always firstly determine the need. But what we currently see is that we are in a replacement market. A software solution is running out of steam and so we were forced to get a new release."	EOL Software Service
"You know, our need often starts at departments that need certain support. Managers are kept up to date, orientate themselves, and find that some processes are not running smoothly. This triggers us to have a look to new solutions to optimize our processes."	Process Optimization
"We have to be a step ahead of our needs because we need to make sure our IT infrastructure can support innervational market demands and to stay ahead of the competition. Therefore, we might orientate earlier in the process."	Market Demand

In contrair with new task buying situations, straight and modified rebuys can greatly influence the pre-purchase process structure. In straight rebuying situations, customers skip the entire pre-purchase process and buy the same product or service again. However, straight rebuys are not very common in business software service markets, as none of the participants experienced this type of buying situation. Concerning modified rebuying situations, participants did experience these types of buying situations often:

> *"Well, your pre-purchase scheme does not apply to our situation, because in almost all projects we currently run, it is the current software supplier of us that reports to us that they stop supporting on-premises solutions and shift to SaaS constructions. Forcing us to shift. If we choose to engage, there will be no trigger & problem analysis and no orientation phase."*

> *"It could be that your software supplier has decided to only provide SaaS software instead of the on-premises you are currently running. You as a consumer can decide if you like to come with or not and search for other suppliers."*

The citations suggest that the problem analysis and the orientation phase could be skipped in modified rebuying situations. This instantly means that customers start at the negotiation phase or at the choice, which explains the variation in responses to the initial question, such as *"we start in the back".* Existing suppliers can eliminate the first two phases in the pre-purchase process easily by giving advice on what the customer should do. It provides the customer with professional advice, and it saves the customer a lot of time. From a competitive supplier's perspective, this situation is not very beneficial. A decrease in phases instantly means a decrease in potential touchpoints and, therefore, fewer moments to influence customer experiences.

Specifically asking to new task buying situations has resulted in more credibility of the pre-purchase process. The participants recognized and agreed to the phases and sequences of the model:

> *"According to the normal process, which we, in essence, try to pursue together with the purchasing department, then it actually will go as the model describes."*
>
> *"But if we introduce new software, then it must be something we do not have. Then the process looks a lot like you described."*

The quotes clearly express a high level of credibility. However, in new task buying situations, respondents still addressed some disparities between their experiences and the assumed theory.

Following the data, patterns of swapping the trigger & problem analysis with the orientation phase and swapping the choice with the negotiation phase can be distinguished. Several participants mentioned that phase 1 and phase 2 do not always happen in the proposed sequence. For example, they state:

> *"It is often that the orientation takes place in advance of the need and problem analysis"* or *"From my point of view, 1 and 2 are not in this sequence per se."*

By digging deeper into the data set, it was found two possible explanations for these disparities. First, evidence was found that the orientation phase is repetitively used:

> *"Now and then, the orientation takes place before one knows what its needs exactly are. Globally, you know a little what you want, but if you first start to orientate it is possible to adjust your needs and describe it better on paper before further orientation."*

The quote suggests that it is possible that vague need recognitions and complex business software services cause the pre-purchase process to be an iterative process in which repetitive orientation optimizes a customer's choice. Vague need recognitions and complex services are typical in KIBS markets and providing customers with constructive knowledge are therefore of great importance. The finding could be important information for suppliers, as they may need to adopt a more active role in providing constructive knowledge to help customers achieve their goals. The second explanation for swapping phases is caused by extrinsic motivation instead of intrinsic motivation. It seems that the level of competition affects the extent of orientation at a certain organisation.

> *"I believe in our situation, we always have to be one step ahead of our needs, because we need to make sure our IT infrastructure must be suited for our purposes. This means we sometimes need to orientate before to tackle possible futuristic problems."*
>
> *"I have worked at XXX and it was important there to make sure the organisation is as close to the market as possible and to convert the demands from the market into our organisational behaviour as quickly as possible."*

The quotes imply that a high level of competition causes organisations to increase oriental activities. Suppliers can therefore indicate the level of competition in their customer's markets to determine the extent of oriental activities. Overall, both explanations cause orientational activities to be increased. This is positive for suppliers, as it increases the possibility of a higher number of touchpoints in the pre-purchase process which they can use to positively influence customer experiences.

Swapping the choice with the negotiation phase is another remark according to the collected data. Several respondents mentioned that the choice has been made before negotiations start. However, it was suspected that most participants' understanding of the concept of negotiation includes price-centric meetings. This is clearly represented in the following quote:

> *"We have our need at the front and certain factors we find important at the back on which we attach certain values and based on that we determine our choice. Next, you start price negotiations, so that is actually swapped."*

By using follow-up questions, it was discovered that the functional aspects of a business software service greatly exceed pricing aspects in terms of importance, which is why the participants stated that the choice comes before the negotiation phase. It corresponds to the response of a participant who mentioned an additional phase, called ''the onboarding process". The participant describes the onboarding process as a process in which functional, technical, and safety aspects should meet a certain desired standard. After that, the price will be determined. The findings suggest that suppliers should meet certain standards in order to fit and be a potential solution.

Next, to support and critiques on the presented pre-purchasing model, some participants raised an alternative theory. Respondents mentioned Professor van Weele's purchasing process. Pre-purchasing stages within the purchasing process are 1) define specifications, 2) select supplier, and 3) contracting (Van Weele, 2010).

> *"I don't know if you know the name, but Van Weele is a procurement professor from 10-15 years ago, which uses specify, select, contract, and order. I can dream it. And those are the phases I always use in my frame of mind. … However, it looks highly comparable to your process."*

According to the citation, the respondent means Van Weele's process looks highly comparable to the proposed pre-purchase process. Remarkably, the respondents that mentioned Van Weele, were only participants holding a procurement-related position within their organisation. This makes sense, as Van Weele is a procurement professor. However, following the data from the case study, in KIBS markets procurement managers often act after the choice as technical purchasing processes are mostly guided by ICT Managers or Informatisation & Automatization (I&A) Managers. It means that Van Weele's procurement process is of marginal importance when investigating the customer journey within the market of the case study.

4.1.2 Touchpoints within the Trigger & Problem Analysis

The first important step within the pre-purchase process is

the trigger & problem analysis. The participants in this study were asked to share their experiences in the trigger & problem analysis phase. Their responses indicate distinctive need recognition triggers that cause different buying situations, several touchpoints, and important stakeholders. Findings on these aspects are displayed below.

Buying situations. As discussed in section 4.1.1, participants define different triggers for need recognition, which cause distinctive buying situations (straight rebuys, modified rebuys, and new tasks). Although these buying situations are no touchpoints themselves, they strongly affect the number of potential touchpoints between customers and suppliers in the pre-purchase process. The findings suggest that straight rebuys and modified rebuys result in fewer touchpoints than in new task buying situations. This is due to a high possibility of skipping pre-purchasing phases in a straight or modified rebuying situation. In new task situations, customers make optimal use of the pre-purchase process and will walk through every phase to make *"an informed decision"*. Hence, it will lead to a higher number of touchpoints, especially within the trigger & problem analysis and the orientation phase. Thus, suppliers can consider the pre-purchase differently when persuading (potential) customers in rebuying situations compared to new task buying situations.

Touchpoints. After the need has been recognized, customers perform a problem analysis in which they analyse the problem at hand. The participants of this study described their problem analysis as a variety of internal activities interspersed with small market scans. Internal activities that can be diluted from the perceived data are internal requests for software help, internal meetings with stakeholders, internal analyses, and creating a programme of requirements. These activities are frequently mentioned in quotes such as:

> *"Well then a request comes in at ICT and we have a look at it. Then we analyse the process and look if we do not already have some software that could provide help."*

> *"Next, we investigate what we specifically need. Therefore, we create a programme of requirements which helps us to analyse our needs."*

These internal activities are very important for customers as they build a foundation for the rest of the pre-purchase process. Despite the importance of internal activities, they do not create touchpoints between customers and potential suppliers. Therefore, these activities are beyond the control of suppliers and cannot be used to influence customer experiences. Next to internal activities, the importance of small market scans in the problem analysis has also been made clear. Customers find it hard to determine their exact problem and needs, as business software services are highly complex.

> *"It is hard to find your needs if you do not know what the market offers"*

For that purpose, customers step outside of their micro-environment to perform externally oriented activities on meso and macro levels. The data suggest that using internet websites, contacting one's network, and approaching external consultants are part of that. These externally oriented activities are concrete touchpoints, which can be used by suppliers to influence customer experiences. Moreover, these touchpoints are extra important, as they occur in the problem analysis which is foundational for the whole purchase process.

Stakeholders. Within the trigger & problem analysis, two types of stakeholders can be derived from the data. The first group of stakeholders are the relevant operational departments that have a certain software service need. It is because need recognitions are often triggered by operating employees who need software support to execute their working process more efficiently. This group of stakeholders will communicate their problem to the second group of stakeholders, which are the IT or I&A managers. The data shows that software requests land at IT or I&A departments, who will handle and investigate the request. From a software supplier's perspective, both groups of stakeholders could be interesting, as they are both involved in the problem analysis and can thereby both be influenced.

4.1.3 Touchpoints within the Orientation Phase

The orientation phase is a very important aspect of the pre-purchase process from a supplier's perspective, as it contains many touchpoints for suppliers to influence customer experiences positively. For this matter, the participants were asked how the orientation phase looks like at their organisation. Based on the responses, strong patterns of longlists and shortlists were found. In this process, the customers use several touchpoints to collect information. Longlists and shortlists are used by customers to narrow down the possibilities and start more in-depth explorations. Longlists are compiled with possible software suppliers that could be of interest and narrowed down to shortlists by deleting suppliers who do not meet up with their programme of requirements. It often results in a list of one, two, or three software suppliers with whom the negotiations are started. The activities used to create long and shortlist results in a list of seven important touchpoints. Table 2 shows an overview of these touchpoints, ordered by their relevance. These touchpoints can be used by suppliers to influence customer experiences.

Table 2. Touchpoint relevance orientation phase

Description Touchpoint[1]	Relevance[2]
Referential Visits	10
Internet Websites	9
Professional Network	8
External Consultants	6
Information Demos	6
Conferences	6
Professional Literature	5

Note(s): [1]Description of the touchpoints used in the orientation phase of the pre-purchase process.
[2]Amount of times a touchpoint is mentioned out of thirteen participants.

Referential Visits. The most frequently used activity by the respondents is a referential visit to other firms that use the desired business software service. A clear representation of this finding is:

> *"It often works best to go and visit other comparable institutions to get a perception of the potential software service you want to buy. If we have a need of a certain software service, we try to find references and have a look at how the software works in practice and check if the desired software does what the software supplier tells it does."*

The quote suggests a very strong desire for references, which is confirmed by many other respondents. Not only do customers use referential visits to see and check the desired software service, but the participants also described other advantages of referential visits, such as:

> *"We get new insights we never had"*
>
> *"There are comparable problems and issues because the users speak the same language"*
>
> *"To check what is on the market"*

The data suggest that referential visits are very valuable for customers. However, the business software service size may also be considered, as the data suggest that fewer referential visits are conducted as the service size decreases. This is clearly represented in the following quote:

> *"A referential visit happens, but not with small software services … If it is larger, such as ERP solutions, which have more challenges and cost more, then a referential visit is very common"*

Overall, this finding implies that referential visits are very important touchpoints assuming the service size is large enough. To respond to that, suppliers of medium and large-sized KIBS must strongly manage good references at all times. This task package could be filled via, for example, a Customer Success Manager.

Internet Websites. The second most important activity in the orientation phase according to the participants is using internet websites. Within the interviews 'using the internet' is vernacular for using websites on the internet. This interpretation is important to mention, as many digital technologies, such as platforms and media, function on the internet. According to the data, websites on the internet are used to scan the market and find *"possible solutions"*, *"potential suppliers"*, and "trends". For these purposes, company websites and business literature websites can suffice for customers. Again, the size of the software service affects the extent of using websites. This can be interpreted from the quotes such as:

> *"Look, a software service which 15 to 20 people use is obviously not much, so then we simply scan the internet for possible solutions and suppliers and buy the service after a short notice."*
>
> *"So, you can simply activate a certain licence and there you have it."*

The quotes suggest that purchase processes of small software services could be executed via the internet entirely. The larger a software service is, the fewer customers prefer to rely only on internet websites after an initial market scan. In those cases, suppliers can focus on providing information on "possible solutions" and "trends" to increase customer experiences. Creating a knowledge base that focuses on constructive information on solutions and trends could be a solution for suppliers to respond to this finding. *Professional network.* Within the business software service market, professional networks are commonly contacted by customers. During these contact moments, the different parties exchange information, brainstorm, and share experiences on certain topics. Many participants mentioned the usage of their professional network, which makes it a very important touchpoint. In all cases, contact between the parties proceeds digitally by phone or internet. Remarkably, the participants do not mention specific moments for using their professional network. Perhaps, this could mean it is not only used in the orientation phase, but also in the trigger & problem analysis and the negotiation phase.

External Consultants. In the quest of implementing large-sized business software services, external consultants are commonly approached for an engagement. According to the data, external consultants can be useful for customers in two different ways. They can lead the entire project, or they can give advice on partial aspects of the project. This is clearly expressed in the following quote:

> *"Generally, we search for consultants or consultancy firms that have guided implementations at other organisations within the market that relates to us. An example, for intranet, P&O had hired a project manager that has done intranet implementations before and already came in with a shortlist … But nine times out of ten, we bring in those people."*

The usage of external consultants could have many causes. The participant from this study primarily misses the capacity and expertise at their firm for implementing large complex business software services. Especially within new task buying situations, projects often exceed the knowledge of a customers' micro-environment.

> *"Very often a need is beyond existing solutions, otherwise it could be solved by using existing solutions."*

According to the data, it could be that customers who bring in consultants to conduct an entire project are included in the entire process starting from the problem analysis. Customers who request advice on certain topics within the process tend to use consultants more frequently during the orientation phase. Suppliers can respond to the needs of consults by providing consultancy possibilities for customers. Subsequently, expanding a customer's knowledge of business software services will positively

influence customers experiences.

Information Demos. The touchpoint implies a meeting in which suppliers present their products and services. Several respondents mentioned the usage of it after a shortlist has been made and the top three is invited for a meeting to conduct an information demo for *"perceiving a better understanding of the service"*. For the customers, demos do not only provide them insights into the product itself but also provide them help and new insights into what the current market has to offer.

> *"Demos happen, of course … and yes, that is what suppliers do first. Also, we gain new insights during such demos, which go beyond our own initial ideas."*

Also, due to the COVID-19 pandemic, there is an increasing trend of demos conducted digitally. However, respondents do not prefer this method, as they get *"less feeling with the people you are dealing with"*. Therefore, despite digital developments, non-digital contact is still of great importance according to the participants, suggesting that both type of information demo approaches can have positive effects on customer experience within the pre-purchase process.

Conferences. This is one of the littlest used touchpoints within the orientation phase and can be divided into different types. From the data, traditional seminars, webinars (online seminars), and 'round the table' were found as different types of conference. Seminars are large-scale meetings with a certain subject in which experts or scientists share knowledge via workshops or readings. Webinars are the online versions of seminars. Round the table is a Dutch concept, in which like-minded practitioners come together in groups smaller than seminars, sharing knowledge, opinions, and thoughts. Remarkably, all respondents that visit conferences share the same reason for visiting them. Reasons are very similar to:

> *"You have to be up-to-date in technique and visiting conferences help you to know what is happening and what is possible."*

They suggest that the participants constantly keep an eye on the market. This is important to know for suppliers, as they can respond to it by joining conferences.

Professional Literature. Reading specialised professional literature is the last relevant touchpoint that can be distilled from the data. Professional literature is mainly used by the participants to *"keep sight of trends in the market"*. Professional literature is accessed by the participants digitally (via websites) and non-digitally (via journals). Customers prefer digital access, as larger amounts of information are accessible, specific information can be found easily and quick, and information can be saved for later use. Despite the usage of professional literature is limited mentioned as an activity in the orientation phase, many participants still mention the use of digital professional literature later in the interviews. It means that professional literature could be more important than initially expected and can be used to affect customer experiences positively.

4.1.4 Touchpoints within the Negotiation and Choice Phases

Touchpoints within negotiations and the choice are combined, as touchpoints within these phases are very scarce. According to the data, the activities of business software service customers within the negotiation phase consists of meetings and try-out demos.

> *"So, you meet with a potential supplier and verify their proposition. After that, you want to see some things and you do some tests. Based on that, we choose to proceed or not."*

Within meetings between customers and potential suppliers, onboarding criteria are discussed. At these moments, suppliers have a large opportunity to influence customer experiences, which makes it an important touchpoint. Meetings can be conducted digitally and non-digitally. However, once more customers prefer non-digital interaction, as they can perceive a better feeling with the people and service they will be dealing with. After conducting meetings with several suppliers from the shortlist, one supplier is invited for a try-out demo. At this phase, an official engagement is nearby. The suppliers implement a demo version for a small number of people, which will be tested and reviewed before an official service contract. The extent and type of meetings and try-out demos seem, once more, to be affected by the size of the business software service. Large services need multiple meetings and try-outs, whereas smaller projects could comply with an online meeting and no try-out. The following quote draws a clear representation of this distinction:

> *"Also, this is product dependent. If it concerns a big service, then we meet face-to-face, but if we buy a service of a couple of hundred dollars, we lose more money if we conduct multiple meetings face-to-face."*

Based on this finding, it can be stated that the impact level of a KIBS is of importance, before creating a certain negotiation strategy. Negotiations on small-sized services must be quick, efficient, and easy to stimulate customer experiences. In large-sized services contexts, suppliers should focus on intensive, constructive, and non-digital negotiation strategies.

The last phase of the pre-purchase process is the choice, which is according to the data an internal process, which creates no touchpoints for suppliers to create customer value. Respondents mention that comparing evaluations is a very common working method for choosing between different suppliers. This finding is expressed in the following quote:

> *"An Evaluation is made per supplier. At that moment we create score lists, functional, technical, financial, support, and finally a total score. Then you say that supplier is most suitable for us, and you use that as a support for your choice."*

It means that suppliers do not have the opportunity to influence customer experiences in the choice phase anymore.

4.1.5 Partial conclusion

Finding all touchpoints within the pre-purchase process business software services is incredibly complex. The findings show that the pre-purchase process and the composition of touchpoints is strongly determined by the buying situation type, size of the service and impact of the service. New task buying situations seem to contain significantly more touchpoints than modified rebuys and straight rebuys. Additionally, a larger software service size and a larger impact of software services also result in an increased number of touchpoints compared to smaller sized software services. Furthermore, in the pre-purchase process from smaller software services, customers tend to prefer more digital touchpoints than non-digital ones, as digital touchpoints are more time efficient.

Throughout the pre-purchase process, the participants' activities reveal several touchpoints between customers and potential suppliers. These touchpoints are considered essential in affecting customer experiences. Within the trigger and problem analysis, visiting internet websites and consulting one's professional network are often used activities that create important touchpoints. The orientation phase is the most important phase from a supplier's perspective, as this phase creates the most touchpoints. In this phase, referential visits, visiting internet websites, consulting one's business network, approaching external consultants, conducting information demos, visiting conferences (online and offline), and reading professional literature are the most important activities that create touchpoints between customers and suppliers in a business software service market. Furthermore, within the negotiation and choice phases, the number of activities slinks down to supplier visits and try-out demos. The comprehensiveness of supplier visits and try-out demos goes hand in hand with the size of the business software service. Supplier visits and try-out demos are significantly more important in large-sized business software services contexts than in small-sized contexts.

4.2 Digital Technology and Pre-purchase Customer Experience

The effects of digital technology on pre-purchasing customer experiences were investigated following five digital dimensions: 1) digital devices, 2) digital platforms, 3) digital media, 4) digital data, and 5) digital technology. The data was retrieved from the respondents by asking them about their experiences and feelings per digital dimension. The findings of this investigation are described in the subsections below.

4.2.1 Digital Devices

Our data reveals that digital devices play a significant role in the pre-purchase process of business software services but also have their limitations. Within the pre-purchase process, smartphones, laptops, and tablets are frequently used by the participant for many kinds of activities related to internal as well as external communication. In general, the participants note a significant increase in using digital devices over the years. Especially since the Corona pandemic, digital mobility has been more important than ever and has led to multi-device journeys. Digital devices that are currently used by the participants during their work are laptops/PCs, smartphones, and tablets. Generally, digital devices stimulate customer experiences by facilitating efficient and effective communication at certain touchpoints. However, digital devices play different roles at different touchpoints. Touchpoints can be arranged digitally or non-digitally and touchpoints can be executed digitally or non-digitally. The data reveals that all pre-purchase touchpoints are always arranged digitally. Despite digital arrangements, significant differences between digital and non-digital execution of touchpoints arise. Preferences of digital execution of touchpoints significantly differ between phases within the pre-purchase process.

The pre-purchase process starts with a trigger & problem analysis in which digital devices have a prominent role. Within the trigger & problem analysis, the participants analyse their problem and try to define their needs via internal analyses and brief market analyses. During the internal analysis, participants conduct internal group meetings with multiple colleagues. At these moments, they significantly prefer non-digital interaction over digital interaction, as non-digital group meetings are more effective. This can be interpreted from the following quote:

> *"When you start a new project, want to brainstorm, or a crisis simulation. Those are the points you want to be near each other … sometimes it is just more effective to work together."*

The finding suggests that internal group meetings are preferred to be conducted non-digitally and digital devices only hold a supportive role in internal meetings. Nevertheless, from a supplier's perspective, the initial market scans (visiting websites and consulting a professional network) are more interesting, as they create influenceable touchpoints. Digital devices strongly affect touchpoints created by visiting internet websites and consulting a professional network. Obviously, internet websites can only be accessed via digital devices, which are therefore of great importance. All three types of digital devices can be used to visit websites. Suppliers can therefore consider multi-device strategies in responding to touchpoints created via websites. Consulting a professional network is also strongly affected by digital devices. The participants contact their professional network often digitally via phone or laptop/PC. Respondents find it *"an easy and quick way to find a large amount of information"*. The data suggest that consulting professional networks is often done digitally and stimulates cognitive customer responses positively. For suppliers, this means that digital networking is of great importance to enhance cognitive customer responses and therefore customer experience. Overall, it can be stated that multi-device strategies must be considered during customer experience enhancement within the trigger & problem analysis of the pre-purchase

process.

Customer experiences within the orientation phase are also significantly affected by digital devices. As described, two distinct roles of digital devices can be distilled from the data. Within the orientation phase, seven important types of touchpoints exist, which are all supported or executed by digital devices one way or another. Table 3 provides a visualisation concerning the role of digital devices per touchpoint in the orientation phase.

Table 3. The role of digital devices per touchpoint

Touchpoint	Laptop/PC	Smartphone	Tablet
Websites	X**	X**	X**
Professional Network	X**	X**	
Referential Visits	X*	X*	
External Consultant	X*		
Information Demo	X*		
Conference	X**		X**
Professional Literature	X**		X**

Note(s): *Touchpoint is supported by digital devices
**Touchpoint is both supported and executed by digital devices

The table shows that external consultants, information demos, and referential visits are preferred to be executed non-digitally. These touchpoints have in common that they are used in the latter stages of the orientation phase, namely after the creation of a shortlist. It can be interpreted that customers' orientational preferences shift from digital executed touchpoints to non-digital executed touchpoints at a certain point. For suppliers, this means that they could enhance more non-digital executed touchpoints to positively stimulate customer experiences in the latter stages of the orientation phase. The enhancement of non-digital executed touchpoints can be done digitally, as digital devices still hold a prominent role in supporting these non-digital executed touchpoints. Ultimately, it can be concluded that initially digital devices strongly affect touchpoints within the orientation phase. As the orientation phase advances, other touchpoints come into play and the effect of digital devices weakens significantly. Suppliers can therefore influence customer experiences more strongly by applying multi-device strategies, which pampers digital executed touchpoints created by websites, professional networks, conferences, and professional literature. Next to that, suppliers can digitally enhance more non-digital contact to stimulate customer experiences of customers that are further down the orientational pipeline.

The importance of digital devices is even more weakened in the negotiation phase. This phase consists of touchpoints such as supplier visits and try-out demos. According to the participants, both touchpoints are preferred to be arranged digitally and executed non-digitally. It implies that suppliers can use digital devices to set up non-digital contact moments. Also, customer experiences are best influenceable during the execution of the touchpoint, which at these touchpoints is done non-digital. Therefore, it was found that digital devices influence customer experiences within the negotiation phase to a small extent and suppliers could therefore focus on their digital findability and optimization of non-digital touchpoints strategies during the negotiation phase.

4.2.2 Digital Platforms

Nowadays, numerous digital platforms exist on the internet which is used by billions of people every day. To find out what type of platforms affect customer experiences in the pre-purchase process, the respondents were asked about their experiences and opinions on digital platforms. Generally, all respondents were using digital platforms. Reasons for using digital platforms is to stay up to date with developments and news within their market. However, the respondents do not take information at all digital platforms for granted, as they feel that a lot of platforms are biased.

> *"If we can assume that the platforms are not biased, then you can use them. However, the problem with platforms is that there are a lot of opinions, which are not necessarily of interest to us. Also, many platforms are affected by companies due to things like kickbacks and therefore their attitude is biased."*

The quote above is a clear representation of how some respondents feel about digital platforms. It suggests that not every digital platform triggers positive customer responses. Within the data, five different types of digital platforms can be distinguished, which seem to differently affect customer experiences in the pre-purchase process. It includes internal platforms, customer-to-customer (C2C) platforms, professional literature platforms, social media, and search engines.

Many respondents mention the usage of social media, in particular LinkedIn, which is considered as the only social media platform used in business. LinkedIn is a social media platform that is specifically designed for people to stay in touch with their business network. Therefore, it could very likely be used when consulting a customer's professional network, which is an important touchpoint in the first two phases of the pre-purchase process. However, the participants provide conflicting responses:

> *"No, LinkedIn does not affect me. Let me put it this way, currently we are in a pre-purchase process and LinkedIn did not play any role in it."*

> *"Yes, of course I am following my business contacts, but I also follow several suppliers on these platforms, the news is quicker than traditional news platforms."*

The differences between responses can have multiple causes. Within the data set, it was found that participants question the level of trustworthiness (biased noises) of LinkedIn and participants can have different purposes (i.e., maintaining their business network or staying up to date on market trends) for using LinkedIn. Based on the diversity within the data, stating a clear effect of social media

platforms on customer experience is not possible. Nevertheless, social media platforms such as LinkedIn could very likely be used when customers consult their professional network in the trigger & problem analysis and the orientation phase. To utilise this opportunity, suppliers can access the professional network of customers by deploying networking strategies via LinkedIn.

In contrast with social media platforms, internal platforms show clear significant effects on customer experiences within the pre-purchase process. The data suggest that internal digital platforms (i.e., Microsoft Teams) are very useful to customers for communicating with colleagues to ensure a clear and structured purchase process. Obviously, a structural purchase process is important in this case study market, as purchasing business software services is a complex process. Therefore, internal platforms, such as Microsoft Teams, facilitate strong positive customer experiences throughout the whole (pre)purchase process. Unfortunately for suppliers, internal platforms are closed platforms, which means they cannot be entered by suppliers to influence customer experiences. Nevertheless, within internal digital platforms, customers share information and opinions digitally. The least suppliers can do to affect customer experiences within those internal platforms, is to optimize the shareability of their knowledge so customers can easily read, use, and spread the content of a certain supplier.

The increment of digital customer-to-customer (C2C) interactions is a relatively new phenomenon for which specific digital platforms are designed. According to the data, these platforms have strong effects on customer experiences within the trigger & problem analysis and orientation phase. C2C platforms come in different shapes and sizes but they all facilitate touchpoints between customers to share their experiences and opinions on a certain product, service, or supplier. The participants describe positive feelings on C2C platforms caused by benefits such as: *"many like-minded people are connected"* and *"positive and negative experiences are shared"*. The quotes suggest that C2C platforms enable customers to learn from each other's experiences by coming in contact very easily, which can stimulate cognitive, affective, and conative customer responses. Together with the prominent role of referential visits in the pre-purchase process, this finding draws the importance of good references within the business software service market. C2C platforms are excellent for distributing good references and can therefore be considered by suppliers as important. Business software service suppliers can build their own C2C webpage but can also engage in existing ones, such as Reddit or LinkedIn.

Other frequently used digital platforms are professional literature platforms. This finding corresponds to the finding in section 4.1.3, which suggests that professional literature is an important touchpoint within the orientation phase. Professional literature platforms are platforms that contain news, trends, development, and comparable information that can be used in the trigger & problem analysis as well as the orientation phase. The platforms contain a one-way stream of market information sent by organisations, such as Gartner & Forrester, the National Cyber Security Centrum and other similar organisations. Motives for subscribing to such platforms, paid or unpaid, is to have access to news, trends, and developments within specific markets. However, respondents state that the information supply is immense and therefore prefer to use professional literature platforms demand-driven, which is possible via search engines located on those platforms. In these situations, professional literature platforms can positively influence customer experiences. However, professional literature platforms are most of all, if not biased, independent platforms, which means that suppliers can only influence customer experiences to a small extent, by for example advertising on relevant platforms.

The last important digital platform type is the search engine, which is actually connected to all platforms. Search engines are tools that help customers to find any website available on the internet, like company websites, C2C platforms, professional literature platforms et cetera. The most well-known search engine is Google. Next to that, there are some others like Yahoo or Bing, but these are not mentioned by the participants. Search engines are very popular among the respondents and therefore, have strong effects on customer experiences in finding any desired information on business software services and suppliers. Some motives for using search engines are:

> *"You can easily find background information of potential suppliers"*
>
> *"It is the initial orientation"*
>
> *"You can just search very specifically"*

The ease with which search engines can be used results in strong positive feelings and frequent use of it throughout the whole pre-purchase process. Business software suppliers could therefore actively work search engines to be able to positively affect customer experiences. Working search engines can be done via activities such as search engine optimization (SEO) and search engine advertising (SEA).

4.2.3 Digital Media

Digital media are paid and owned communication channels that enable suppliers to convey messages to customers and potential customers and thereby affect customer experiences. From a customer's perspective, these messages can be considered as advertisements. The participants were asked about their experiences and opinions on digital media. According to them, they receive a lot of digital advertisements via several digital media, such as telephone, email, websites, and LinkedIn. Also, they state that advertisements do not affect them. Many responses are similar to:

> *"No, receive a lot of digital advertisements and you know, nice try but we receive those things never at the right moment and nine out of ten times I ignore or delete them."*

These types of quotes tell us that unsolicited adverts rarely

have the right timing. Therefore, many respondents prefer to receive information on demand instead of unsolicited. Nevertheless, the participants know that receiving unsolicited information is part of their job and, therefore, allow it. When it comes to preferences, the participants strongly prefer unsolicited information through email, as emails can be stored or deleted quickly and easily in contrary to for example phone calls which take far more effort. Some even feel positive about email as a digital medium, as they can store emails easily and find information quickly if they have information needs. This is clearly represented in the following quote:

> *"I receive many many emails and I throw them all in one big box. When I need something, I can just fish out the things I need."*

The data suggests that email can have positive effects on customer experience because customers can access information on demand, and it is not disturbing their work. It means that suppliers can focus on digital media which can be accessed on demand and do not disturb customers' work to a large extent.

Adverts on websites and social media are other types of digital media that can convey information to customers. Through these media, information is very often communicated via graphical content, such as banners, videos and animations. The respondents were asked about their experiences with those types of media. Generally, they replied more positively than at the media telephone and email.

> *"When you visit websites, you know, there are always banners at the side of a website, these banners always show adverts which apply to you, because your browser history is tracked. I do not mind, because I do not have to see adverts that do not apply to me. Next to that, you can simply look past them."*

The quote reveals that adverts on websites and social media, which are based on tracked interests and preferences, do not trigger negative customer experiences. They hold favourable characteristics, such as personalized content and not keeping up customers, which could lead to stimulating customer experiences. However, the effectiveness of these media in B2B markets remains unclear, as the data does not imply a significant effect of these digital media on the pre-purchase process. Experiments could be performed first to indicate the effectiveness and determine the value of using them.

4.2.4 Digital Data

Using digital data to influence customer experiences is part of data-driven marketing. Data-driven marketing is a process of collecting and analysing digital data to find customer engagement patterns. Digital data can be collected from customers consciously and unconsciously. In this study, the respondents were asked how they feel about consciously sharing digital data for business purposes. The respondents stated that they generally disliked leaving their details like email addresses or phone numbers for business purposes. Reasons for not leaving these details is that they are afraid of data abuse and receive undesired emails or calls. Nevertheless, exceptions are made when organisations offer interesting white papers or interesting newsletters, which can be seen as professional literature. Still, customers tend to be very careful with their details, which can be interpreted from the following quote:

> *"Seldom, seldom. Then I really have to think, gosh, this is interesting. But that is very seldom. It is also because I am very selective in those cases."*

Our data reveals that customers are willing to share their details if they get something in return. In those cases, the exchange and use of digital data can stimulate customer experiences positively. However, customer detail treatment is also important, as customer data abuse can harm customer experiences. The negative impacts on customer experience through abuse of digital data also applies to unconsciously collected data. Unconsciously collected data is collected via digital tools provided by firms such as Google, which enables suppliers to identify behaviours patterns, propose personalized content, and execute automated advert campaigns on the internet. As mentioned earlier in section 4.2.3, advertisements on the internet via websites and social media should be tested to determine their effects on customer experiences.

4.2.5 Digital Technology

The concept of digital technology in relation to customer experience implies the usage of progressive digital tools like artificial intelligence (AI), virtual reality, and the internet of things (IoT) to build interactive experiences. Within B2C markets, tools such as AI, virtual reality, the IoT have already been enrolled broadly with success. However, the usage of digital technologies in B2B contexts is lagging behind B2C contexts (Vieira et al., 2019). To find out how business software service suppliers can use digital technologies to positively influence customer experiences, the respondents were asked about their experiences and feelings on digital technologies in the pre-purchase process. By analysing the retrieved data, it can be confirmed that B2B markets are still lagging in using digital technologies for building interactive customer experiences. In pre-purchasing processes, respondents rarely come across service suppliers that use progressive digital technology tools that exceed their expectations and thereby stimulate positive customer experiences.

As the respondents had no experience with digital technologies in the pre-purchase process, their opinion was asked on if it could add value to their customer experiences. A significant group of respondents thinks that digital technologies could stimulate their customer experiences. However, the emotional aspects that are triggered with digital technologies will always be overshadowed by the technical aspects of the service. The following quotes clearly represent this finding:

> *"Yes, it would be more fun, but eventually you must follow the predetermined requirements which are not based on happy or nice feelings."*

> *"I would not say it will influence our decisions, but within purchase processes relations, credit and stuff like that are still important aspects."*
>
> *"Look, when you have got three potential suppliers left, you should first assess them on which fits us the best."*

This finding conflicts partially with existing literature from Meyer and Schwager (2007), which states that B2B experiences should not be thrilling experiences, but rather be trouble-free and reassuring. The findings show that thrilling experiences could stimulate B2B customer experiences but will always be surpassed by technical aspects of the product or service. It means that suppliers could focus on their services rather than creative marketing campaigns.

4.2.6 Partial Conclusion

This subsection answers the sub-question formulated in section 3.1: how does digitization affect customer experience in the pre-purchase process? As described earlier, digitization can be divided into digital devices, digital platforms, digital media, digital data and digital technologies. By analysing the data, it can be concluded that, in B2B contexts, the usage of digital devices is strongly associated with touchpoints throughout the whole pre-purchase process. However, this study has shown that a completely digital approach to the pre-purchase process by suppliers is not the way to go. As non-digital contact remains very important, especially within the latter stages of the orientation phase and in the negotiation phase, suppliers can enhance non-digital contact with customers to stimulate customer experiences positively.

Digital platforms also strongly affect pre-purchase customer experiences in several ways. It was found that B2B customers use four types of platforms, namely internal platforms, search engines, C2C platforms, professional literature platforms. As the platforms are very different, they affect customer experiences very differently. Whereas internal platforms (e.g., Microsoft Teams) and search engines have positive effects throughout the whole pre-purchase process, C2C platforms and professional literature platforms only seem to affect the orientation phase. Social media platforms show no great effects but can also be considered as supportive to certain touchpoints, such as consulting one's professional network. Next to digital platforms, digital media also affects customer experience in different ways. It was found that customers are no fan of unsolicited information via any kind of digital medium, as they prefer to receive information on demand. Nevertheless, they acknowledge the fact that it is part of their job and therefore prefer digital media which do not disturb their work to a large extent. In fact, largely disrupting digital media harms customer experiences. Therefore, non-disrupting digital media or accessible on demand can positively affect customer experiences. Examples of such digital media are email, websites, and social media.

The exchange and use of digital data can have positive impacts on customer experiences. Unconsciously exchanged customer data can help suppliers with digital advertisements, which is mainly useful within the trigger & problem analysis and the orientation phase of the pre-purchase process. Nevertheless, abuse of these data can have a negative impact on customer experiences. The same applies to consciously exchanged customer data. Customers are very careful with sharing data such as professional details and are only willing to share their details if they receive something in return (e.g., whitepapers or interesting newsletters).

Finally, during this study, evidence has shown that advanced digital technologies (e.g., artificial intelligence, virtual reality, and the internet of things) can create an extra dimension in terms of customer experiences. However, in business software service markets, technical aspects of the desired business software service are significantly more important than an extra customer experience dimension. It implies that business software service customers prefer informative experiences instead of thrilling experiences.

4.3 Using digital technologies to control touchpoints and influence customer experiences

Controlling touchpoints to positively influence customer experiences is important for many firms. This study focussed on important touchpoints within the pre-purchase process and the effects of several digital technologies on customer experiences within the pre-purchase process. By combining the findings on important touchpoints and the effects of digital technologies on customer experiences, it was possible to find twelve distinct associations, which are displayed in appendix II. A comprehensive analysis of these associations enabled us to define thirteen distinct activities, which business software suppliers can use to manage customer experiences throughout the pre-purchase process, which is displayed chronologically in figure 2. Narratives of activities and figure 2 can be found in appendix III.

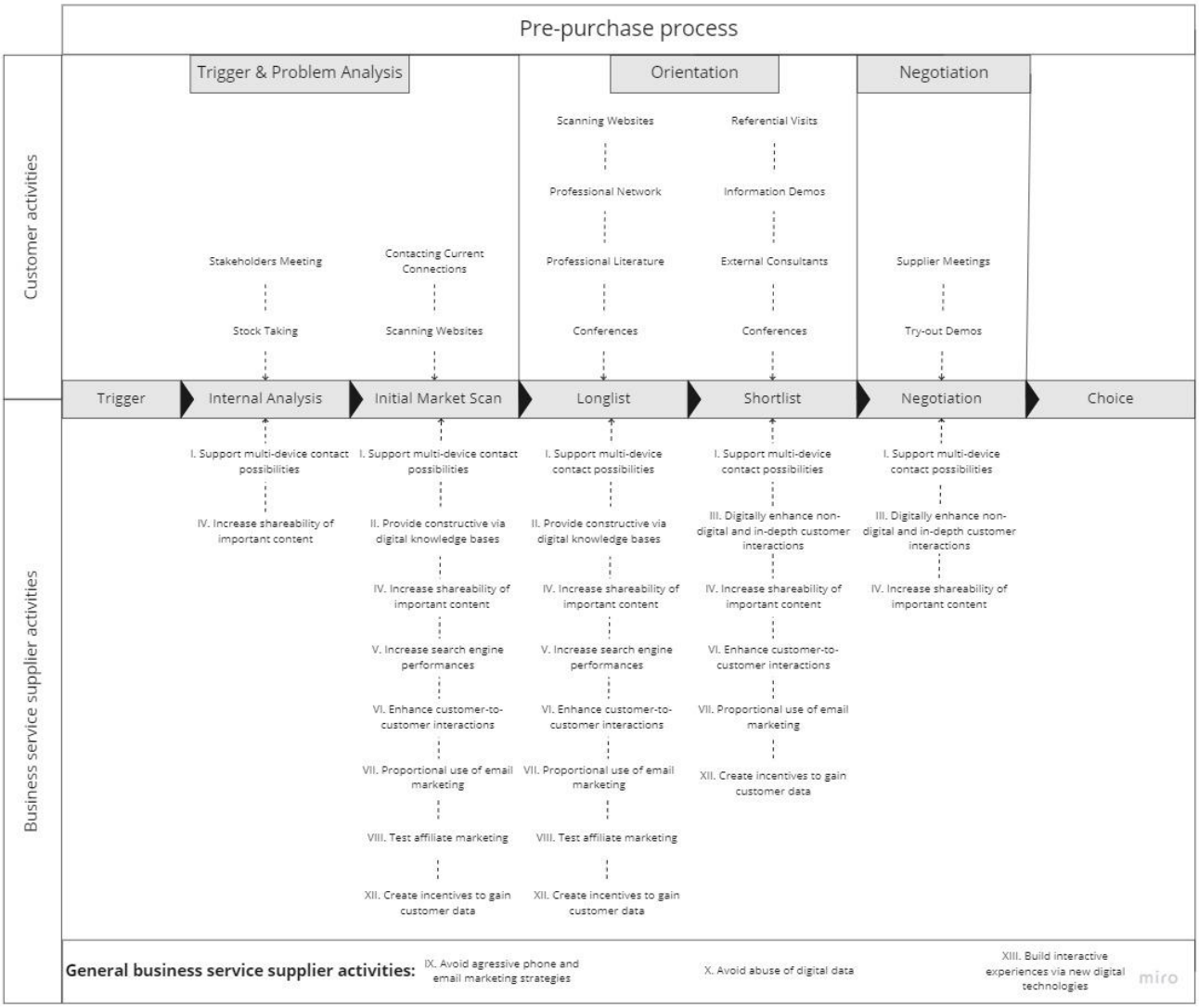

Figure 2. Strategical timeline of KIBS supplier activities

5. Concluding Thoughts

5.1 Key Findings

Creating strong positive customer experiences is a highly desired achievement in marketing presently. However, digitization has evolved customer behaviour continuously over the years, leaving constant challenges for businesses in managing customer experiences (Hamilton & Price, 2019). Especially within the pre-purchase process, complexities increase due to digital developments (Ashman et al., 2015). Contemporary literature tackles the complexities within customer experience management more frequently. However, literature on customer experience management within B2B contexts is significantly studied compared to B2C contexts. Hence, the purpose of this study was to explore the effects of digitization on customer experience management within the pre-purchase process. To investigate this purpose, the following research question was created: "*How does digital technology affect customer experience across touchpoints within the pre-purchase process?"* Through extensive qualitative research, the pre-purchase process of KIBS customers, the effects of digital technology on touchpoints within that process, and how KIBS suppliers can respond to those effects were investigated.

The results indicate that the pre-purchase process of KIBS customers is complex and heterogeneous, affected by several characteristics (e.g., size, impact, need trigger). Customers perform multiple distinct activities that create nine important touchpoints between customers and KIBS suppliers. The impacts of digitization onto these touchpoints are highly visible throughout the entire pre-purchase process. However, different digital dimensions show diverse effects on pre-purchasing touchpoints. To begin, digital devices, including laptop/PC, smartphones, and tablets are substantially used throughout the entire pre-purchase process to support touchpoints. However, the digital execution of touchpoints substantially drops after the creation of a shortlist, as of that moment customers strongly prefer non-digital contact. Hence, other digital dimensions (digital platforms, digital media, digital data, and progressive digital technologies) also have far less clout to positively influence customer experiences within the latter phases of the pre-purchase process.

Digital platforms (Internal platforms, C2C platforms, professional literature platforms, and search engines) are very useful digital instruments for customers to gather information, and therefore positively affect customer experiences in the pre-purchase process. Concerning digital media, customers prefer non disrupting digital media (such as websites and email) to receive information and could therefore influence customer experience positively. However, the effectiveness of websites remains unclear and should be tested. Excessive use of phone and email as media to communicate triggers negative customer experiences, which are not desirable. Digital data can positively affect customer experiences in two ways. Consciously collected digital data on customers could support the usage of email as a digital medium. Unconsciously collected digital data on customers could support the usage of websites as a digital medium. Thereby, both types could stimulate customer experiences in the first two stages of the pre-purchase process. Progressive digital technologies can be used to build interactive experiences and thereby could stimulate customer experiences. However, interactive experiences are strongly subordinated to technical aspects of the KIBS, which means that progressive digital technologies have weak effects throughout the pre-purchase process.

5.2 Discussion & Contributions

From several years on, digitization has continuously changed the customer journey thoroughly, especially within the pre-purchase phases (Ashman et al., 2015; Hamilton & Price, 2019). Where consumer marketing literature widely discusses customer experience management and innovation, business marketing literature on customer experience management innovation remain scarce. Remarkable, as Existing literature has clearly addressed the contemporary importance and complexities of customer experience management within B2B contexts (Lemon & Verhoef, 2016; Zolkiewski et al., 2017; Jain et al., 2017; Sahhar et al., 2019; Becker & Jaakkola, 2020; De Keyser et al., 2020). This study dove into this gap created by digitization, B2B customer experience management, and the pre-purchase process. This has resulted in nine important, digital as well as non-digital, touchpoints in the pre-purchase process of KIBS customers, twelve distinct relationships between digital technology dimensions and the pre-purchase process of KIBS customers, and thirteen KIBS supplier activities that can be deployed for stimulating customer experience management.

Our discoveries contribute to the existing literature in several important ways. To begin, this study contributes by reducing the existing literature gap between B2B literature and B2C literature. Despite B2B environments are more complicated (Witell et al., 2020; Altounian et al., 2016; Lemon & Verhoef, 2016; Sahhar et al., 2021), existing literature on customer experience management greatly shortfalls B2B environments compared to B2C environments. This study contributes to resolving this deficit by proposing a theory on important customer activities along the pre-purchase process, describing the effects of digitization on customer experience, and providing KIBS suppliers with activities essential to improve their customer experience management.

Secondly, this paper contributes to the existing literature by focussing specifically on the pre-purchase phase, contrary to existing marketing literature, which often addresses the entire customer journey (e.g., Lemon & Verhoef, 2016; Zolkiewski et al., 2017; Sahhar et al., 2021). This study contributes to customer journey literature by diving deeper into the pre-purchase process and theorize more specific steps within the pre-purchase process, important need triggers, and factors that significantly affect the pre-purchase process structure.

Third, this study contributes to customer experience management literature by providing a novel perspective on pre-purchase customer experience management, which is important as new digital technologies are continuously changing touchpoints between customers and suppliers

(Ashman et al., 2015). This study contributes by describing the effects of digital technologies on customer experiences within the pre-purchase process.

Fourth, this study confirms existing theories (e.g., (Sahhar et al., 2019) and (Witell et al., 2020)) on the pre-purchase process of KIBS customers. However, it must be noted that the theory only applies in ultimate circumstances. This study suggests that the circumstances, such as the KIBS size, impact, and need trigger, should be considered, as they significantly affect the pre-purchase process. The finding corresponds to the theory from Lemon and Verhoef (2016), who describes that the customer's dynamic external environment has a significant impact on customer experiences.

Fifth, the results of this study address the importance of several topics within customer experience management that have also been brought up by studies in B2C contexts. It concerns the importance of customer experience dynamics, multichannel journey, multidevice journey, partner and network management, and internal firm perspective. We, therefore, contribute by showing that B2B literature can adopt knowledge on these topics from B2C literature.

Finally, this study contributes literature by focussing on B2B services, in particular KIBS markets, which is in line with the contemporary servitization trend driven by digital business (Kohtamäki, Parida, & Patel, 2020). This study contributes by providing B2B service providers with thirteen activities to improve their customer experience management within the pre-purchase process.

5.3 Limitations & Future Research

Our study used an intensive qualitative research approach on how digitization affects customer experience in the pre-purchase process of B2B customers and how KIBS suppliers can manage it. It is likely that the results of this study can motivate other scholars to expand the knowledge on B2B customer experience management. Limitations provide good starting points for that purpose. First, in this study, thirteen intensive interviews with representatives from large organisations with over 250 employees were conducted. It means that the unit of observation is blind to small/medium organisations (<250 FTEs), which is a limit, as they exist far less. For example, in the Netherlands, 90% to 95% of the registered firms consist of small/medium firms. It means that the units of observation are a skewed representation of KIBS customers. Therefore, scholars are encouraged to study customer experiences of small/medium-sized businesses in the pre-purchase process of KIBS. Based on similarities and differences, one could determine if different customer experience management strategies are required.

Second, this research is explorative in nature and therefore it so far remains hard to identify the exact effect of digital technologies on customer experiences. Hence, this study suggests that future research should investigate this topic by using a quantitative approach instead of a qualitative approach. This could help to determine the exact effectiveness of certain digital technologies on customer experiences or even customer responses (cognitive, affective, and conative).

Third, this study investigated the pre-purchase process and its important touchpoints in KIBS contexts intensively. However, existing literature defines different types of touchpoints, such as customer-controlled, supplier-controlled, partner-controlled et cetera (Homburg et al., 2017). This study is limited by only investigating customer-controlled touchpoints and leaving other touchpoint classifications out of the equation. We, therefore, encourage other scholars to investigate the pre-purchase process on other types of touchpoints, such as supplier-controlled and partner-controlled.

Finally, this study intensively investigated the effects of digital technologies on customer experiences. However, customer experiences can trigger cognitive, affective, and conative responses. This study could not consistently measure the specific responses that are triggered by different digital technologies. Thus, a future research suggestion would be to study this topic by applying an outcome-based approach starting from the different classifications of customer responses.

5.4 Managerial Implications

While customer experience management in B2B is incredibly complex, businesses must find a way in today's digital jungle to enhance customer engagement early within the customer journey. Based on this study's findings, this study offers practitioners several implications to take better control over touchpoints by using digital technology and thereby positively influence customer experience. To begin, a supportive tool (figure 2) was created that captures critical customer activities, which provide managers with a better understanding of a customer's journey during the pre-purchase process. Simultaneously, it was found that the buying type situation and the service impact level significantly affect the pre-purchase process. Therefore, managers can benefit from this paper by considering different strategies when supplying replacement markets, as the pre-purchase processes can be compressed due to rebuying situations and low service impact level.

Secondly, figure 2 also presents a chronological timeline of the phases within the pre-purchase process and the associated supplier activities per phase. Managers can benefit from optimal customer experience stimulation within the pre-purchase process by implementing all proposed supplier activities. The study does not suggest a certain important sequence of implementation of activities, but managers should implement supplier activities in line with the relevance for their organisation. For example, suppliers of low impact level KIBS should focus on the proposed supplier activities corresponding to the problem analysis and orientation phase, as their customers will experience and prefer more compressed pre-purchase processes.

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8. Appendix

Appendix I: Interview Protocol

Background information:

- Name of the organization
- Industry of the organization
- Function of the interviewee
- Participation in business software service purchase process

Touchpoints within the pre-purchasing phase:

Could you explain the process at your firm before the purchase of a business software service?

- Who?
- What?
- When?
- How?
- Why?

Digital technology affecting customer experience in the pre-purchasing phase:

What digital devices in the pre-purchase process of buying business software services?

- Why?
- When?
- How?

Do you use platforms in the pre-purchase process of buying business software services? (i.e., information marketplaces, social media, search engines etc.)

- What?
- When?
- Why?
- How?

What are your experiences with business advertisements via digital media channels? (i.e., email, search engines, websites, social media)

- Through what media do you receive business advertisements?
- What is your opinion on them?
- How they affect you?

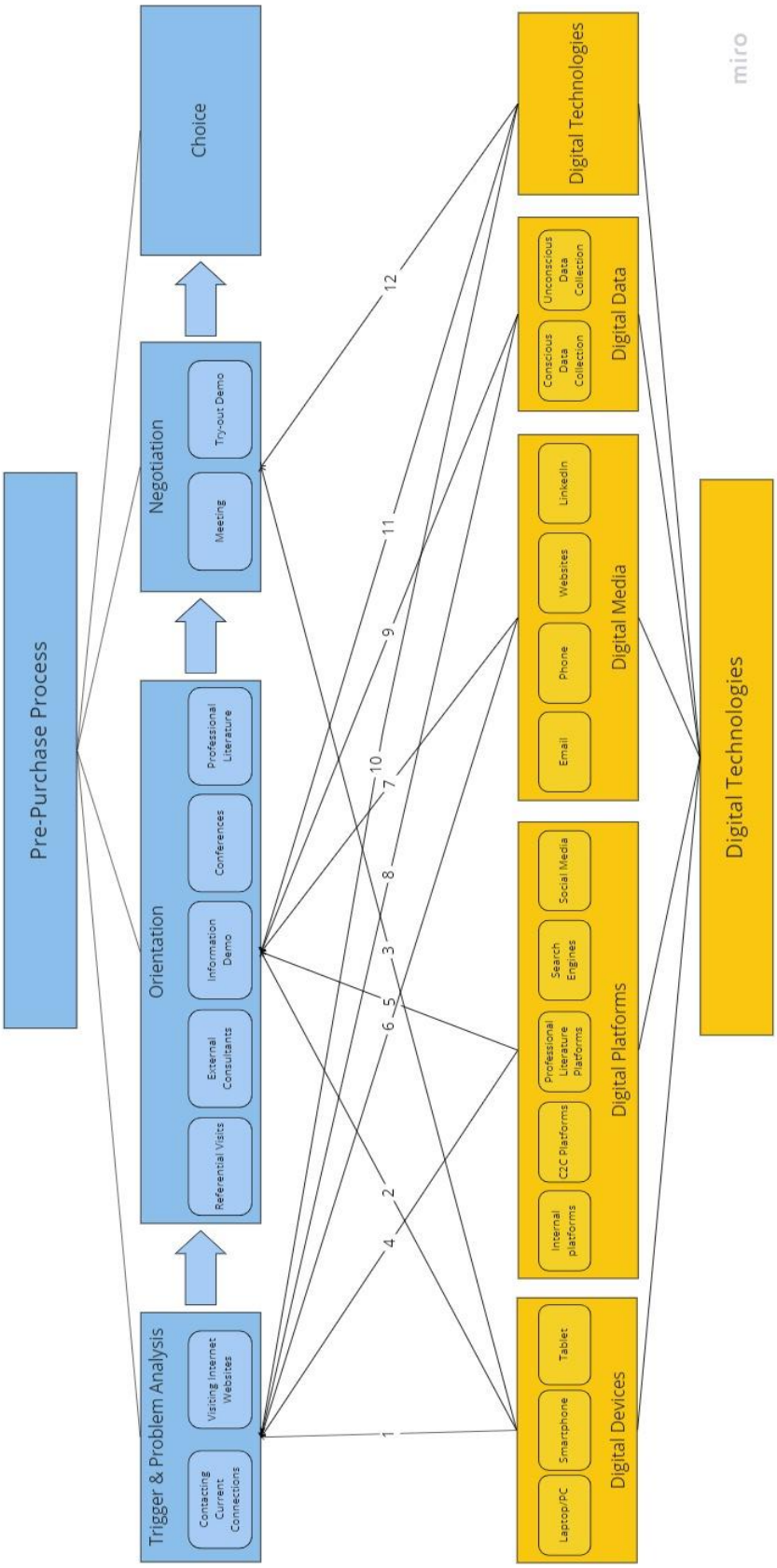
Do you give personal or business information to businesses at certain digital points in the pre-purchase process of buying business software services? (i.e., contact forms, newsletter sign ups, surveys)

- Where do you give personal or business information?
- Why do you give information?

What experiences do you have with advanced digital technologies in the pre-purchase process of buying business software services? (i.e., chatbots, virtual reality, cloud computing)

- What advanced digital technologies do you know?
- What digital transformations/developments did you notice overtime?
- Do you think that advanced digital services add value to your pre-purchase phase when buying business software services?

Appendix II: Relationships between digital technologies and the pre-purchase process



Appendix III: Narratives of KIBS supplier activities

Relationship Numbers	Relation	Description relationships	KIBS Supplier Activities
1, 2 & 3	Digital Devices ↓ Pre-purchase Process	● Within the trigger & problem analysis, customers perform initial market scans trying to define their problem, needs, and possible solutions. These market scans are very often performed digitally for which laptops/PC, smartphones, and tablets are used as they gain easy and quick access to loads of information. ● Within the orientation phase, customers often create longlists and shortlists by gathering information on services and suppliers. Information is gathered via websites, connections, referential visits, external consultants, information demos, conferences, and professional literature. Interestingly, for the creation of longlists customers prefer more digitally accessible information sources, such as websites, network of connections, professional literature, and online conferences. At these moments, suppliers can digitally influence customer experiences. After a longlist has been made, customers reflect their programme of requirements to the longlist and a shortlist is created. After the shortlist is created, customers still need a lot of information but prefer more non-digital activities, such as referential visits, contacting external consultants, information demos, and offline conferences. Nevertheless, digital devices still hold an important role as they are used to arrange and set up these activities. ●Within the negotiation phase, the effects of digital devices on customer experience are marginal. Within KIBS markets, negotiations consist often of supplier visits and try-out demos. As KIBS contains high complexities and interests, customers prefer face-to-face (non-digital) activities. Nevertheless, digital devices hold a prominent role in arranging and setting up appointments.	I. Business suppliers must adopt multi-device contact possibilities to positively affect customer experiences at touchpoints throughout the entire pre-purchase process. Multi-device implies three digital devices: laptop/PC, smartphone, and tablet. II. Especially within the trigger & problem analysis and the early stages of the orientation, KIBS suppliers must focus on digital methods to provide constructive information to customers. A popular example in practice is a digital knowledge base. III. From the latter stages of the orientation phase and onwards, KIBS suppliers must focus on non-digital and more in-depth interactions with customers.
4 & 5	Digital Platforms ↓ Pre-purchase Process	● Within the trigger & problem analysis, internal platforms positively affect customer experiences by providing communication tools through which stakeholders of the pre-purchase process can communicate effectively and efficiently. However, internal platforms are closed platforms which make it hard for suppliers to influence customer experiences. ● Search engines are also very important platforms within the trigger & problem analysis. As they provide easy and quick access to websites containing loads of background information on companies, services, and solutions, which helps to specify their needs. ● Within the beginning of the orientation phase, internal platforms, C2C platforms, professional literature platforms and search engines could positively stimulate customer experiences. The most important platforms for KIBS suppliers are C2C platforms and search engines, as internal platforms and professional literature platforms can only influence customer experiences to a small extent.	IV. KIBS suppliers must create share-friendly content to help customers share supplier content easily via closed internal platforms (such as Microsoft Teams), which are used throughout the entire pre-purchase process. V. KIBS suppliers must optimize their search engine performances, by implementing search engine optimization (SEO) and search engine advertising (SEA). Both should definitely be used to attract and help customers within the trigger & problem analysis and the orientation phase. VI. KIBS suppliers must enhance C2C interactions to respond to the importance of references. Examples of such practices are creating a networking and partnerships webpage on a supplier's company website or using ambassador firms. It will inform and tease customers within the trigger & problem analysis and the orientation phase.

6 & 7	Digital Media ↓ Pre-purchase Process	● Digital media is only useful for conveying information in the trigger & problem analysis and the orientation phase. ● The telephone is an outdated medium for conveying information and shows no effect on customer experiences. ● Aggressive telephone and email advertising have negative effects on customer experiences in the pre-purchasing process. ● Using email to convey information to customers can have positive effects on customer experiences within the trigger and problem analysis and orientation phase as long as the frequency is proportional. ●Websites and social media contain preferable characteristics from a customer's perspective. Next to that, the media bodes well with touchpoints used in the trigger and problem analysis and orientation phases. Therefore, they could be suitable for conveying information to customers. However, the effectiveness of such methods in business marketing remains unclear and therefore, should be tested first.	VII. KIBS suppliers should invest in email marketing to influence customer experiences within the trigger & problem analysis and orientation. However, should avoid aggressive email marketing as it will have negative effects on customer experience. The content of email marketing should be constructive. VIII. KIBS suppliers should invest in testing affiliate marketing, which entails advertising via media such as websites and social media. Affiliate marketing could positively influence customer experiences only within the trigger & problem analysis and orientation phases, as the touchpoints used in these phases bode well with these media. IX. KIBS suppliers should avoid aggressive phone and email marketing strategies as they negatively affect customer experiences within the pre-purchase process.
8 & 9	Digital Data ↓ Pre-purchase Process	● Digital data can only affect customer experiences within the trigger & problem analysis and orientation phases as it can support digital marketing purposes, which are not applicable in the negotiation phase. ● Customers dislike leaving their business details, such as phone numbers and email addresses. Using these types of data carefully for email marketing could lead to positive customer experiences. However, abusing their data will lead to negative customer experiences. ● Customers are sometimes willing to share their business details for something in return, such as interesting whitepapers, newsletters, and business literature. Using the business details for a follow-up could very likely stimulate positive customer responses as the customers already have affections with a certain service. ● Unconsciously collected digital data can be used for advertising campaigns on internet websites and social media. Websites and social media hold preferable characteristics for customers and could therefore stimulate customer experiences positively. However, as mentioned the strength of the effects remain unclear and should be tested via experiments.	X. KIBS suppliers must ensure that digital data of customers is safe and will not be abused, as it will have negative impacts on customer experiences throughout the pre-purchase process. XI. KIBS suppliers must invest in creating incentives such as whitepapers, newsletters, and business literature to retrieve customer data such as business details. Using these business details for remarketing can influence customer experiences positively as customers have shown their affection with a certain KIBS. XII. KIBS suppliers should invest in testing data-driven marketing techniques to determine their benefits. The devices and media used within this type of marketing bode well with touchpoints in the trigger & problem analysis and orientation phases, which suggest positive effects on customer experiences.
10, 11 & 12	Digital Technologies ↓ Pre-purchase Process	● The usage of progressive digital technologies in the pre-purchase process of businesses still lags compared to B2C markets. Business customers encourage suppliers to use new technologies for creating more appealing interactive experiences. However, these experiences will always be subordinate to the technical aspects of the KIBS.	XIII. If technical aspects are optimized, business software suppliers could go the extra mile for building interactive processes by using progressive digital technologies, such as virtual reality, the internet of things, and artificial intelligence. It will exceed customer expectations, which will influence customer experiences positively.