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Exploring Customer-Centric Energy Service Innovation & Development

A Qualitative Study on the Role of Customer Engagement & Digital Touchpoints in Energy Service Innovation & Development

Master's thesis in *Management and Economics of Innovation* and *Supply Chain Management*

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Abstract

Facing challenges in the context of digitalization in Sweden's energy sector, traditional firms are moving towards providing services and solutions to their customers, distancing themselves from the traditional utility-driven perspective. This study explores how digitalization enables customer-centric service innovation and development by viewing the customer as an active participant in the process and by using the benefits derived from digital customer touchpoints. Using a qualitative approach, semi-structured interviews were held with energy service providers and their customers to gather insights into customer engagement, digital interactions, and market actors.

The findings show that customers are being increasingly included in the service innovation and development process, positioning them as active co-creators of value. Respondents discussed that customers engage both explicitly through active touchpoints such as online customer panels and webinars, and implicitly through passive touchpoints from which usage data and behavioral patterns can be derived. Accordingly, digital touchpoints were categorized into passive and active based on the degree of provider involvement in interactions. The study also found that digitalization is changing the actor constellations in the energy sector. These changes pose challenges for traditional energy service providers since they shift the use of digital touchpoints to various degrees, reducing the possibilities for co-creative innovation and development. Despite these challenges, the study highlights that effective management of digital touchpoints and customer co-creation enhance service innovation and development. By matching digital touchpoints to customers based on their behavior, needs, and preferences they can be used more efficiently when including customers in the process of innovation and development. Therefore the thesis concludes that energy service providers should take a more structured approach regarding digital customer touchpoints to match these to the needs of the customer. In this the categorization into active and passive digital touchpoints and implicit or explicit customer engagement may prove helpful.

Keywords: Digitalization, Service Innovation & Development, Energy Services, Energy Sector, Digital Touchpoints, Customer Centricity.

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Moritz Berger & Melker Lundberg, Gothenburg, June 2025

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1
Introduction

This introductory chapter aims at giving a background to the issue handled in this thesis and why the issue at hand is worthy of study. This includes a general background to the issue, a description of the Swedish energy market and its actors, and a short description of energy services. Furthermore, the chapter includes delimitations which are set to state clear boundaries for the thesis, the aim of the project, and the research questions that the thesis sets out to answer.

1.1 Background

Digitalization is reshaping industries across society, and the energy sector is no exception as it now faces a new set of challenges. Energy companies are moving toward a new logic of operation focusing on providing services and solutions whilst distancing themselves from the traditional producer logic (Kindström et al., 2017). The evolving climate in the market, where energy prices and consumption fluctuate more aggressively, has made customers more engaged and interested in energy related questions. This requires incumbent energy providers to establish closer relationships with their customers (Heinen & Richards, 2020). In turn, this can help energy providers understand market needs and convert them into services and solutions that are tailored to their customers' needs.

This is made possible primarily by two groups of technology that have come to redefine the market. Firstly, new digital technology that allow for new ways of interacting with customers and accessing data (Goldbach et al., 2018). Secondly, renewable energy technologies such as solar panels, electric vehicles, and energy storage solutions that redefine who is a customer, who is a producer and introduces concepts like energy prosumers (Goldbach et al., 2018). Considering this, traditional energy companies have come to rethink their customer offerings with an increasing focus on service innovation and development (Kindström et al., 2017).

The digitalization has and will have a significant impact on the energy sector, where digital disruptions like Information and Communication Technology (ICT) as well as Internet of Things (IoT) play a big role in realizing digitalization in the energy market (Varela, 2017). The author continues to explain that technologies like these allow utility companies, as in the energy sector, to embrace new and improved processes and new ways to interact with customers. Varela (2017) continues by explaining that B2B-customers have a growing interest in their energy consumption as well as in producing their own energy. Esgalhado and Veillard (2025) mention that the main reasons for the growing interest are decarbonization, energy security, reliability and cost, putting pressure on energy providers to digitalize and provide customers with the digital services needed to optimize their energy consumption. B2B-customers generally have a high consumption of energy and to a larger extent own energy storage and production assets. One solution to support the increasing customer interests is for energy providers to increase their digital service offering and create deeper customer relationships (Kindström et al., 2017). Furthermore, technologies such as smart meters allow energy companies to collect detailed data on energy production and consumption, which, in combination with connected equipment that can be controlled remotely, can optimize the balance between energy demand and supply. However, it remains unclear how these digital advances affect the way energy companies create and enhance their digital services, especially in the B2B context. The increased customer interest in relation to energy, combined with the fact that research on digital services and digital service touchpoints in a B2B setting is scarce (Gao et al., 2021), makes this context of special interest.

The changes in the market described above, not least the digitalization, also affect the structure of the energy sector. According to Varela (2017) the digitalization opens up the energy sector and allows new players to enter a market which has previously been dominated by traditional utility companies. These companies act in-between the traditional energy companies and the customers as intermediaries, offering services such as spot price optimization and frequency markets (Santos & Saraiva, 2024). This again changes the interactions between the traditional energy provider and its customers, whilst simultaneously increasing the competition in the market. Favoretto et al. (2022) argue that a move toward digital services calls for a change in the customer's role, moving toward a relationship where service providers and customers co-create value. This approach requires engaging customers more closely in service innovation and development processes and is enabled by digital technologies. Additionally, they argue that digitalization enables companies to expand their service offerings and optimize their services to the customers' needs.

The case company for the thesis, being a traditional provider of energy and energy related services, now faces several challenges arising from a shifting operational logic, increased market volatility, technological integration, and changing actor constellations in the market. These developments raise issues on, for instance, the customer's engagement in service innovation and development, changes in how suppliers interact with customers, the emergence of new actors on the market, and the effect these changes have on supplier-customer relationships.

1.1.1 The Swedish Energy Market

The Swedish energy system relies on a varied mix of energy sources, with a large part being renewable and low-carbon production. Annual electricity production typically lies between 150 and 165 TWh, which exceeds the national consumption of 135 to 145 TWh (Energiföretagen, 2025). Despite this, balancing supply and demand in real time has become more difficult due to the growing share of intermittent sources such as wind and solar. In 2023, renewables made up 63 percent of electricity production, with hydro and wind being the largest sources. The rest came from nuclear and thermal power (SCB, 2025). This shift has caused more frequent price spikes and grid strain, especially during peak hours or when weather conditions limit renewable output. Electricity is usually cheapest at night and most expensive during the morning and afternoon (Vattenfall, 2025). These fluctuations have made it more important for businesses to actively manage their energy use.

In response, energy providers have started offering a wider range of digital services. Some are simple tools for monitoring usage, while others are more advanced and allow customers to participate in energy markets. For instance, Göteborg Energi's Energirapporten gives B2B customers an overview of their energy data across multiple facilities (Göteborg Energi, 2025). Other services help businesses trade flexibility by shifting or reducing consumption when it makes economic or grid-related sense (Poblete & Halldórsson, 2023). Many of these services are offered in collaboration with energy intermediaries such as agents and aggregators. These actors help businesses make better use of their energy data, optimize usage based on market signals, and pool smaller assets like batteries or solar panels into a bundle that can be traded on wholesale markets (Kerscher & Arobleya, 2022). As digitalization opens the market to new actors, traditional energy providers are under pressure to rethink how they interact with customers and develop services that meet changing expectations.

1.2 Aim

This thesis explores how digital customer touchpoints influence the innovation and development of customer-centric energy services. It examines how digitalization enables new ways for energy providers to engage with customers and to optimize their service offerings. By empirically examining digital touchpoints as well as gathering insights of key stakeholders engaged in the innovation and development of energy services, this thesis explores how digitalization influences the service process. With a specific focus on customer engagement, value co-creation, and changing actor roles.

1.3 Delimitations

In order to fulfill the aim of the thesis and to effectively answer the stated research questions, a clear set of delimitations is necessary. This section outlines delimitations made with the intention to set clear boundaries on the scope of the thesis. This also aims to help the reader understand what the thesis entails.

- *The study focuses solely on the business-to-business (B2B) segment of the energy market, specifically on real estate companies.*

Since the B2B segment differs significantly from the business to consumer (B2C) market in terms of energy consumption, behaviors, and needs (Lundin & Kindström, 2024), a focus on B2B will allow for deeper insights into digital touchpoints and service development. Furthermore, given the broad scope of the B2B-segment it was chosen to focus on the customer segment of real estate companies to narrow the study down to a reasonable scope. The real estate sector was chosen since its actors have similar needs and behaviors, not only allowing for more depth in the research but also to gain a better understanding of the customer.

- *The study focuses on the Swedish market.*

Given that the energy market differs in its characteristics between different countries regarding for instance regulations and infrastructure, the main focus of the study will be on the Swedish energy market (Diamant et al., 2021). The prerequisites in terms of infrastructure and energy mix, combined with regulatory boundaries greatly impact how energy companies operate and what they are allowed to and able to offer their customers. Therefore, a clear geographical delimitation is necessary.

1.4 Research Questions

In line with achieving the aim of the study, three research questions have been formulated. The questions strive to facilitate the understanding of the energy market and contribute to the academic knowledge regarding the role of digitalization in the sector.

The following three research questions will be answered in the report:
- RQ1: *How do customers engage in the innovation and development of digital energy services?*
- RQ2: *What digital touchpoints that are connected to Service Innovation and Development exist between energy service providers and their customers?*
- RQ3: *How do energy companies use digital touchpoints in the innovation and development of customer-centric services?*

2

Theoretical Framework

This thesis primarily investigates service innovation and development and digitalization in the energy sector. Therefore, it was necessary to investigate literature on these subjects. To synthesize the theories brought up in this chapter, it ends by synthesizing the presented theories into a model to explain how each part connects to the other.

2.1 Digitalization shaping industries

Digitization, *Digitalization*, and *Digital Transformation* are three terms that are commonly used interchangeably (Kraus et al., 2021). However, Ross (2019) explains that there are important distinctions to be made between the terms and that one should not confuse them. Saarikko et al. (2020) mention that digitization is a component in digitalization which in turn is part of the concept of digital transformation. This is supported by Verhoef et al. (2021) who established that the three terms are three phases within the digital transformation as illustrated in Figure 2.1.

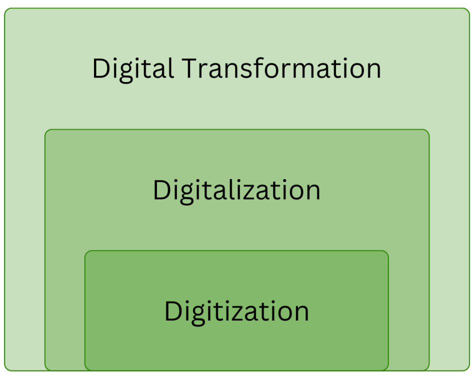

Figure 2.1: The relation between digitization, digitalization, and digital transformation. Adapted from Saarikko et al. (2020).

Gradillas and Thomas (2023) define digitization as the conversion, representation, and enhancement of analogue information, processes or products/services to a digital format. They further define digitalization as a concept that refers to the adoption, application and utilization of digital tools to capture new business opportunities leading to socioeconomic change. In this sense, digitalization encompasses a broader context than digitization. The concept of digital transformation or becoming digital is described by Ross (2019) as the rethinking of a company's value proposition, creating customer value by offering a personalized and seamless customer experience through the use of digital technologies. Heymann et al. (2023) include an additional layer by describing how digitization occurs within a company, digitalization occurs in an economic sector and digital transformation takes place on a cross-sectoral scale. They further explain that a clear definition is fundamental when analyzing the subject.

Given the thesis focus on the energy sector the term digitalization will be used to describe the phenomenon that is being studied, in line with the scope of the terms presented by Heymann et al. (2023). This definition will be used when preparing interviewees in order to ensure there is a common understanding of the subject. Furthermore, the definition will be used to analyze current events in the energy sector.

2.1.1 Digitalization of the Energy Sector

According to Heymann et al. (2023) the digitalization of the energy sector has gained increased traction, where digital technologies and business models are being used to a larger extent. They further argue that it is driven by various technological advances leading to an increased availability of data, improved analytics, and interconnection. Crittenden et al. (2019) mention that digitalization and digital technology introduce challenges for traditional firms. They explain that disruptive startups and new actors see opportunities to enter markets and challenge traditional businesses by positioning themselves as intermediaries between customers and traditional firms. These intermediaries are often faster to adopt and adapt to new technology, making it difficult for traditional firms to keep up. The authors argue that this makes it important for traditional firms to use the large amounts of data on customer behavior that they possess. Varela (2017) adds to this when explaining that customers in the energy market to a larger degree want to be engaged and therefor expect providers to tend to their specific needs. Varela (2017) confirms that new technologies like IoT and ICT allow new actors to enter and disrupt the energy sector. However, Kindström et al. (2017) mention that some intermediaries are sought after by traditional firms since they may contribute with valuable resources that do not exist internally such as technological expertise.

To navigate the process of digitalizing the energy sector, the European Union has implemented an action plan where they claim that digital technologies such as ICT, modern sensors, big data, IOT and AI can play a big role in decarbonizing the energy system (Digitalisation of the Energy Systems, n.d.). The increased access to energy data along with the exchange of data between different actors in the energy value chain is a key enabler for the development and innovation of new digital energy services (Digitalisation and Data Exchange Are Key Enablers for a Modern and Resilient Energy System, 2024). Investments in digital technology such as smart meters and smart connected devices can help visualize energy consumption in real time and allow for personalized advice (Digitalisation of the Energy Systems, n.d.).

2.1.2 Digital Technology

According to Verhoef et al. (2021) a driver of digitalization is the increasing access to a multitude of digital technologies with some examples being: *Internet-Of-Things (IoT), Artificial intelligence (AI), blockchain, cloud computing etc.* Verhoef et al. (2021) explain how the emergence of digital technologies changes the role of actors in the market, where for instance customers become co-producers and competitors become collaborators. Furthermore, these technologies change the competitive landscape and the customer behavior in markets, making it important for existing firms to adapt in order to stay relevant. By leveraging digital technologies in combination with data analytics companies can utilize existing knowledge to create more value for their customers (Verhoef et al., 2021). Warner and Wäger (2019) found that digital technology can allow firms to make sense of and utilize big data and maximize customer centricity. They further argue that firms must continuously adapt their strategy and operations to the rapid technological change in order to remain competitive.

Lundin and Kindström (2024) mention that B2B firms that rely on digital technology may face challenges with creating and managing valuable customer journeys. They further argue that digitalization can both provide benefits in the form of new ways to interact with and manage customer journeys, but may also make the customer journeys more complex by adding more touchpoints and more actors that interact with them. Goldbach et al. (2018) further mention that digital technology changes what services energy providers can develop. They continue with saying that digital technology like smart-meters and ICT allow for energy providers to develop digital energy services. However, actors in the energy sector struggle with what digital energy services they should develop, which Goldbach et al. (2018) mention may be because of organizational inertia and risk-aversion. Kindström et al. (2017) mention that there is no clear definition of energy services, they identify this as a reason for why traditional firms struggle in their innovation and development. Hence, the following section aims to explain energy services and how they can be classified.

2.2 Energy services

Energy services, according to Haas et al. (2008), refer to the useful outcomes derived from energy consumption rather than the energy itself. While traditional energy providers have focused on the supply of electricity, heat and fuel as a commodities, the concept of energy services shifts attention to the delivery of functional benefits. These benefits could for example be heating, cooling, lighting and industrial processes (Haas et al., 2008). Instead of viewing energy as a standalone product, this perspective emphasizes the role of efficiency, optimization and customized solutions tailored to the user's needs.

Over time, the scope of energy services has expanded to include a wide range of activities beyond direct energy provision. According to Kindström et al. (2017)

energy services have evolved to include energy efficiency improvements, investment financing and functional contracts. This transition has paved the way for more sophisticated service models. As described by Poblete and Halldórsson (2023), energy providers now integrate digital tools, real-time energy management and demand-side flexibility to optimize consumption and improve operational performance.

2.2.1 Categorization of Energy Services

Poblete and Halldòrsson (2023) present a framework of categorizing energy services as a relationship based on their level of complexity and customer involvement. The authors classifies energy services into two main categories: basic and advanced energy services as seen in Figure 2.2. Basic energy services include information-oriented and analysis-oriented services, which primarily focus on providing data and insights without direct operational intervention. These services are typically transactional, require minimal collaboration between provider and customer, and involve standardized agreements. In contrast, advanced energy services, including improvement-oriented and contract-oriented services, require deeper provider engagement. These services often involve long-term partnerships, strategic collaboration and in some cases, performance-based contracts to ensure measurable energy savings and efficiency improvements.

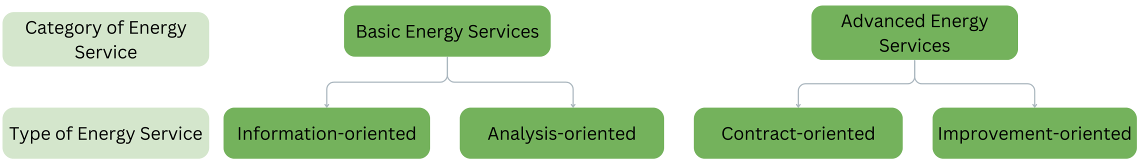

Figure 2.2: Categories and types of energy services. Inspired by Poblete and Halldòrsson (2023).

Information- oriented services represent the most basic type of customer-provider relationship. Poblete and Halldòrsson (2023) explain that typical for this category is minimal interaction between the energy service provider and the customer and the transactions are typically market driven and based on market price. Customers and providers act independently, meaning that no long-term commitment or collaboration is required. These services typically involve standardized transactions without active provider involvement in optimizing energy use. Since they require little to no investment or operational changes, they are often used by businesses that need basic insight into their energy use but do not require direct energy management.

Poblete and Halldòrsson (2023) describe Analysis oriented services as involving a higher level of interactions between the service provider and the customer compared to information-oriented services. While still being transactional in nature, these type of services focus on helping business assess and improve their energy efficiency. Customers typically source these services through competitive biding processes and the contracts are usually short-term and cost-driven. These services go beyond basic transactions by providing expert evaluations to help businesses understand how energy is being used and where improvements can be made. However, these services do not include direct implementations of energy-saving measures from the provider, they only provide the insights necessary to optimize energy.

Improvement-oriented services, unlike the last two categories, according to Poblete and Halldòrsson (2023) involve direct implementation of energy-saving measures, requiring providers to take an active role in process optimization and system upgrades. Therefore, these services require a closer provider-customer relationship, often structured as long-term partnerships to ensure sustained energy efficiency improvements. These services typically include technical upgrades, system optimization and direct implementation of energy-saving solutions. Since these services require higher level of engagement and investment, they often involve customers that focus more on long term improvements in energy efficiency.

Contract-oriented services described by Poblete and Halldòrsson (2023) represent the most complex and integrated form of energy services, requiring long-term agreements and deep collaboration between the provider and the customer. Unlike transactional models, where businesses purchase services as needed, contract-based energy services are structured around performance guarantees, shared investments, and measurable efficiency outcomes. By transferring part of the operational or financial risk to the provider, these agreements ensure that customers achieve specific energy savings or operational improvements over time. Since these services often are tailored for a customers specific need, they require a high level of trust and ongoing cooperation. This is gained by providers taking an active role in managing energy consumption, optimizing processes, and ensuring compliance with regulatory and sustainability goals. Contract-oriented agreements allow companies to focus on their core operations while leveraging the provider's energy management capabilities to achieve sustained efficiency gains and financial benefits.

The theory presented by Poblete and Halldòrsson (2023) will be used to define energy services. It will further help to narrow the study toward information- and analysis-based services, more specifically digital information- and analysis-based services. For simplicity, the notion of "Energy service" or "Digital Energy Service" will refer to these definitions.

2.3 Digital Customer Touchpoints

Customer touchpoints are important parts of customer journeys, described by Lundin and Kindström (2024) as all interactions and engagements between a supplier and its customers. The management of touchpoints is by nature more complex in a B2B context than in B2C since more stakeholders are involved in the customer journey. They mention that in contrast to B2C, B2B customer journeys include more actors since the customer journey with a supplier often overlaps with external actors including competitors. Meaning that the actors included are the customer and supplier, but also external actors and intermediaries. They further explain that the complexity of customer journeys increases with digitalization since the number of touchpoints tend to increase in line with the incorporation of digital technology, which is supported by Kannan and Li (2017). Digitalization opens up new possibilities regarding touchpoints, where they go from being purely physical to also being digital and data-driven (Lundin & Kindström, 2024). Digital touchpoints then, are all interactions between supplier and customer that take place in a digital format and therefore provide companies with the ability to create value through customer data, more in line with the customer's needs (Kannan & Li, 2017; Lundin & Kindström, 2024).

To manage digital touchpoints effectively, Lundin and Kindström (2024) conceptualize them using three dimensions, resources, actions, and environments. The first dimension refers to the resources that are exchanged in the digital touchpoint which can be for instance knowledge, data, and time. The second dimension constitutes the actions that are taken at a touchpoints, like searching for information on a webpage. The third and last dimension of touchpoints is the environment, which they describe as the context in which the touchpoint is situated. According to Lundin and Kindström (2024) it is important to look at these dimensions to understand digital touchpoints and to address each dimension when managing customer touchpoints.

2.3.1 Managing Digital Touchpoints in a B2B Context

The shift toward more digital customer touchpoints requires suppliers to develop new operational capabilities (Lundin & Kindström, 2024). In their article, seven such capabilities are identified, structured by the three dimensions mentioned earlier.

To manage digital touchpoint resources, they suggest two capabilities being: *preparing customer resources* and *Integrating digital resources*. Preparing customer resources means that suppliers must be able to increase their customers' digital readiness so that the customers can engage at the digital touchpoints. This can for instance entail training or alerting customers of upcoming features or updates (Lundin & Kindström, 2024). They further argue the importance of enabling customers like this since it increases the engagement at the digital touchpoints. The second capability, integrating digital resources, means synthesizing data from various digital touchpoints and combining it with other sources of data to create valuable insights for the customer. They argue that this capability is important to capture the value of available data. The increased availability of data that digital touchpoints provide give suppliers new opportunities for value-creation.

Lundin and Kindström (2024) continue by explaining the three capabilities needed to manage digital touchpoint actions. The first capability is *enabling collective actions* which in the context of digital touchpoints is important since B2B customers usually have multiple roles that interact with the touchpoints. Enabling collective actions then relates to suppliers ensuring that different roles at the customer organization can coordinate actions using shared digital interfaces and consistent information. Secondly, they mention *supporting customer actions* as a capability when managing digital touchpoints. This entails providing the customer with support based on what the customer is doing and when they are doing it. This can be achieved by proactive updates and alerts, and by providing the customer with data-driven insights. The third capability they mention is *balancing activation levels*. Since digital touchpoints allow the suppliers' resources to be available at any time, customers tend to be more active. This can also lessen the need for suppliers to provide direct input to the customer's actions, making it possible to re-allocate resources to complex touchpoints that require more direct interaction (Lundin & Kindström, 2024).

Lastly, Lundin and Kindström (2024) bring up two capabilities of importance when managing digital touchpoint environments. The ability to *hybridize environments* is the first capability. The authors argue that physical environments are still pivotal within the B2B segment, but can be supported by digital touchpoints and environments, emphasizing the importance of balance between physical and digital interactions. Hybridizing environments is then to find a balance between different environments so that digital touchpoints complement rather than replace essential physical touchpoints. The last capability they mention is *merging digital environments*. Digital environments should be bundled if there is an overlap in content in order to create a seamless and positive experience for the customer. Additionally, the merging of overlapping environments makes them easier to handle for the supplier and easier to interact with for the customer leading to greater satisfaction.

This theory will be used to guide the identification of digital customer touchpoints in the B2B energy service context. Lundin and Kindström's (2024) three dimensions and seven capabilities will be used to analyze and understand how energy service providers currently work with their digital interactions and how they use them to drive customer-centric service innovation and development.

2.4 Service Innovation and Development

This section outlines the theoretical foundation for understanding service innovation in B2B digital markets, with a specific focus on the energy sector. The structure follows a progression from defining service development, through frameworks that support customer interaction and system complexity, to a broader view of value co-creation. These theories inform the research design and analytical approach, selected for their relevance to digital service transformation, customer integration, and networked service delivery.

2.4.1 Foundations of Service Innovation and Development

Service innovation and development refers to the systematic process of designing, creating and enhancing services to meet customer needs and expectations (Edvardsson et al., 2000). This process encompasses various stages, including ideation, design, implementation and evaluation. The process is influenced by factors such as market trends, technological advancements, and customer feedback. Unlike product development, service development is characterized by intangibility, co-creation with customers, and continuous adaption to market demands (Gallouj & Weinstein, 1997). The structured development is, according to Gustafsson et al. (2012), particularly critical in B2B markets, where service offerings often need to integrate with complex client systems while at the same time complying with regulatory frameworks. In these contexts, services are frequently tailored to specific customer processes, making the ability to manage iterative development cycles and sustain long-term partnerships essential.

2.4.2 Process Frameworks for Service Development

The development of digital services in the energy sector requires an understanding of how companies plan, create, and deliver value in changing markets. This section introduces important frameworks that support service development, covering both structured innovation processes and collaboration between different actors. By bringing together insights from New Service Development (NSD), Service-Dominant Logic (S-D Logic), and service ecosystem theory, this chapter builds a foundation for analyzing how energy companies respond to customer needs, use digital technologies, and work within broader service networks.

2.4.2.1 The New Service Development framework

The New Service Development (NSD) framework provides a structured approach to service innovation, emphasizing iterative design and thinking (Menor et al., 2002). The NSD framework typically includes stages such as opportunity identification, service concept development, business analysis, prototype testing, market launch, and continuous improvement (Alam, 2006; Storey & Hull, 2010). Customer requirements are not only explored during the initial stages of NSD but are also continuously refined through iterative concept testing and customer feedback loops, particularly during the fuzzy front-end of service innovation (Alam, 2006). Especially in B2B markets such as the energy sector, where client requirements are often complex and context-specific, NSD highlights the importance of cross-functional collaboration and internal knowledge sharing to accurately capture and respond to nuanced expectations (Kindström & Kowalkowski, 2014). However, NSD primarily focuses on managing internal service processes and may not fully account for the relational, iterative, and networked nature of value creation in digital contexts. Therefore, it must be complemented by broader theoretical lenses.

2.4.2.2 Service-Dominant Logic

Service-Dominant Logic (S-D Logic), introduced by Vargo and Lusch (2004), shifts the focus from designing discrete service outputs to facilitating ongoing value co-creation between actors. In this view, value is not embedded in a service offering, but emerges through interaction, experience, and resource integration. Market demands and customer expectations are not fixed inputs but evolve through use and relationships (Chandler & Vargo, 2011).

S-D Logic synthesizes its perspective into five foundational axioms, which together re-frame how value is understood in service systems: (Vargo & Lusch, 2016):

1. *Service is the fundamental basis of exchange.*
2. *Value is co-created by multiple actors, always including the beneficiary.*
3. *All social and economic actors are resource integrators.*
4. *Value is always uniquely and contextually determined by the beneficiary.*
5. *Value co-creation is coordinated through institutions and institutional arrangements.*

These axioms help shift the analytical focus from firm-controlled outputs to networked, systematic processes of value emergence. A critical distinction made in this framework is between co-production and co-creation. Co-production refers to the customer's involvement in the design or configuration of a service offering, whereas co-creation encompasses the broader and ongoing realization of value through service use and contextual application (Lusch & Vargo, 2006).

2.4.2.3 Service Ecosystems

Building on S-D Logic, the concept of service ecosystems expands the scope from pairwise interactions to dynamic, multi-actor networks. Service ecosystems are defined by Vargo and Lusch (2016) as "relatively self-contained, self-adjusting systems of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange".

In service ecosystems, value co-creation emerges through the interaction between diverse actors, including service providers, customers, partners, regulators, and digital intermediaries. These actors are, according to Vargo and Lusch (2016), connected and coordinated through institutions, which facilitate the shared norms, rules, and meanings that guide behavior and facilitate collaboration. Simmonds et al. (2021) further explain that institutions play a critical role in shaping how actors interact, what resources are shared, and how innovation unfolds. In the energy sector, for instance regulatory frameworks, technical standards, and market mechanisms both enable and constrain the development of new digital services (Simmonds et al., 2021).

Digital technologies play a central role in enabling coordination within service ecosystems. They facilitate resource integration, real-time interaction, and data-driven decision-making among diverse actors (Breidbach & Maglio, 2016). Technologies such as IoT, intelligent automation, and digital interfaces enable the liquidation of resources, making them more transferable across contexts and more accessible across time and space (Kowalkowski et al., 2024). They further argue that by supporting seamless information flows and interaction possibilities, digitalization enhances the adaptability and responsiveness of service ecosystems, while simultaneously introducing new complexities related to system integration and relationship management.

Together, NSD, S-D Logic and service ecosystem theory offer a comprehensive lens for analyzing how energy firms develop and deliver digital services. NSD informs how firms structure service development activities and integrate customer feedback into internal processes. S-D Logic brings attention to how value is co-created through interaction, contextual experience, and cross-actor resource integration. The service ecosystem theory expands the view to include institutional dynamics, resource integration patterns, and broader networks of interacting actors.

2.4.3 Service Triads

Because our study examines the service innovation and development in the energy sector, we draw on literature about service triads and tetrads to frame the relationships that affect the creation and enhancement of services. Wynstra et al. (2014) describe *service triads* as the relationship that occurs when a buying firm contracts a supplier to deliver services to the buyer's end customer. The service triad then consists of the supplier, buyer and buyer's customer and explains the underlying relation between the different actors and the flow of services, information, and transactions between them. The triadic setup differs from the traditional view of linear supply chains since all three actors in the triad are in a way connected to each other which is a critical point of the triadic structure (Wynstra et al., 2014). The buyer-supplier link is usually contractual, the buyer-customer link defines the value-proposition, and the supplier-customer link is the direct delivery of services. The concept of service triads stems in that firms move toward outsourcing activities while keeping a focus on, and specializing in their core activities (Wynstra et al., 2014). The basic service triad described here is illustrated in Figure 2.3 where the arrows represent the flow of services, information, and transactions.

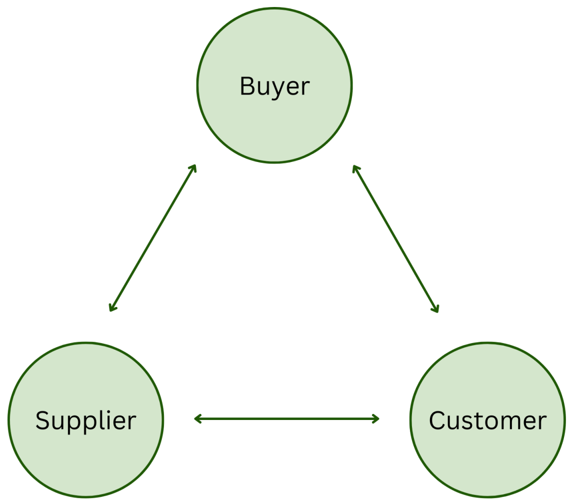

Figure 2.3: Basic service triad. Adapted from Wynstra et al. (2014).

The buyer in this case acts as an intermediary since the service delivery to the customer is conducted by the supplier. Although this increases the overall value proposed to the customer, it also poses challenges since it makes the relationships more complex (Wynstra et al., 2014). The buyer is in this case still responsible for the satisfaction of the customer, even though the service is delivered by a supplier, meaning that the reputation of the buyer lies in the hands of the supplier. This calls for coordination, quality control, and management of relationships when managing a service triad (Wynstra et al., 2014).

2.4.3.1 Service Tetrads

Not all triadic relationships look the same, Wagner et al. (2018) define five triadic relationship constellations all of which differ in what links between actors are present in the relationship. Wagner et al. (2018) further extends on the triadic archetypes and additionally identify the tetradic archetypes which involve four actors. The tetradic archetype builds on the same relationship as the triadic archetype but includes an additional actor, the competitor/intermediary. The base case of the tetradic archetype can be seen in Figure 2.4. However, Wagner et al. (2018) identify 11 additional constellations that could be observed and used to describe the relationship between the four actors.

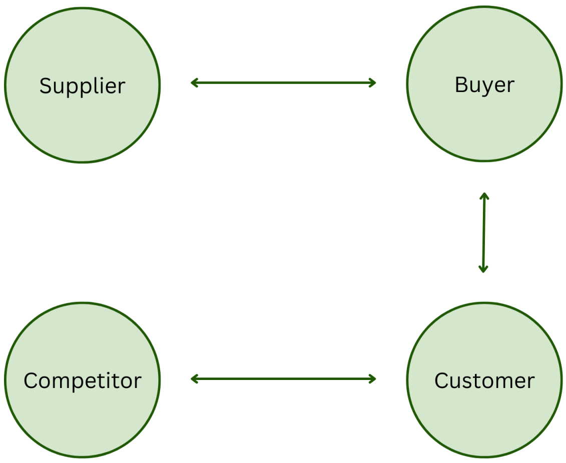

Figure 2.4: Tetradic archetype. Adapted from Wagner et al. (2018).

The constellation of the tetradic archetype depends, just as described by Wynstra et al. (2014), on the content of the links between the actors (Wagner et al., 2018). By studying a tetradic archetypes one can gain insight into how additional actors such as competitors or intermediaries affect the service delivery network (Wagner et al., 2018).

The concepts of service triads and tetrads are used in this thesis to describe the structure of the energy market and how different actor constellations influence service development. They also informed the interview guide, particularly on questions related to market roles and relationships. However, while these models help explain inter-organizational structures, they do not fully capture how customers influence service innovation, especially in digital contexts. For that reason, the next section shifts the focus to customer-centric perspectives.

2.4.4 Customer-centric Perspectives

To emphasize the importance of the customer in the process of service innovation and development, this part of the chapter focuses on the role of the customer as an increasingly central actor in service innovation and development. As digitalization continues to reshape service delivery in B2B energy markets, customers are no longer viewed as passive recipients of value, but rather as active participants in its creation. This shift places the customer at the center of service development, shaping how services are designed, delivered, and improved. The following theoretical perspectives are used to explore this role in greater depth: customer proximity, the customer's role, co-creation, customer segmentation and customer engagement. Together, these concepts form a coherent framework for understanding how customers interact with and contribute to digital energy services.

Customer proximity refers to the perceived closeness between the customer and the service provider and includes dimensions of spatial, temporal, social, and hypothetical proximity (Dalla Pozza, 2022). Spatial proximity relates to the accessibility of the service, temporal to the speed and synchronicity of interactions, social to perceived empathy and personal contact, and hypothetical proximity to how well the service meets expectations. Dalla Pozza (2022) explains this framework as a help to understand omni-channel service delivery, where a customer may interact with a firm through multiple digital and human interfaces. The author continues by saying that while digitalization brings efficient communication, it also risks creating psychological distance. Poor design, unresponsiveness, or impersonal services can weaken proximity, while personalization, speed, and a good tone can help reinforce it.

Beyond proximity, the customer's role in service innovation has undergone a fundamental shift. Traditionally viewed as passive recipients, customers are now increasingly framed as active participants who contribute knowledge, preferences, and feedback that shape service design and delivery (Gustafsson et al., 2012). Drawing on service-dominant logic, value is understood as something co-created through interaction between providers and customers, rather than being embedded in the offering itself (Vargo & Lusch, 2004). In B2B services, this may include requests for feature development, modifications to how usage data is presented, or suggestions for improved usability in digital interfaces. This perspective positions the customer not only as a user but as a resource in the innovation process, capable of influencing service development through ongoing input.

This leads naturally to the concept of co-creation. According to Payne et al. (2008) co-creation involves a series of interconnected processes through which customers and firms jointly create value. These processes include customer value-creating activities, provider activities and the interactive "encounter processes" that link them. Payne et al. (2008) mention that in digital service innovation and development, co-creation is increasingly facilitated through interactive tools such as online feedback forms, embedded communication features, and real-time data tracking. These mechanisms enable service providers to collect customer suggestions, preferences, and complaints, which can be integrated into iterative development processes. Lemon and Verhoef (2016) emphasize that such interactions occur throughout the entire customer journey, highlighting that co-creation can take place before, during, and after the formal service exchange.

While co-creation offers valuable opportunities for service innovation, it is important to recognize that customers vary in their ability and motivation to participate. Research on customer segmentation highlights that customer heterogeneity, particularly in terms of organizational size, internal capabilities, and strategic orientation, influences how and to what extent customers can engage in service development (Cossío-Silva et al., 2016). For example, segmentation research emphasizes that firms differ significantly in terms of internal capabilities, structure, and strategic priorities, which in turn affect their ability to participate in collaborative innovation (Mora Cortez et al., 2021). Larger organizations may be better positioned to engage in structured development efforts due to more formalized processes or dedicated personnel, while smaller firms may face resource constraints or have less defined roles. Terho et al. (2012) argue that value-based selling in business markets depends on the supplier's ability to understand and adapt to the customer's specific context and business needs, which naturally differ across segments. This makes customer segmentation not only a commercial consideration but also a strategic approach for identifying which customers are best positioned to participate in co-development (Terho et al., 2012). Continuing with saying that by prioritizing customer groups with greater innovation potential, service providers can allocate development resources more effectively and increase the impact of co-creation initiatives.

The concept of customer engagement further expands the understanding of how customers participate in service innovation and development. Van Doorn et al. (2010) define engagement as behaviors that go beyond purchase and usage, motivated by factors such as emotional connection, satisfaction, or social influence. These behaviors may include giving feedback, joining user communities, recommending services to others, or sharing insights with the provider. Brodie et al. (2011) describe engagement as involving emotional, cognitive, and behavioral elements that emerge through ongoing interaction between the customer and the firm. In the context of B2B energy services, customer engagement may take the form of regular interaction with digital interfaces, the use of advanced features, or ongoing communication with provider support teams (Brodie et al., 2011). These types of interactions reflect the customer's willingness to invest time and effort in the service relationship. Gao et al. (2021) emphasize that engagement is shaped by how customers experience and respond to service touchpoints across the customer journey, particularly in digital B2B settings.

To sum up, this section has outlined how customer proximity, role, co-creation, segmentation, and engagement shape customer involvement in digital energy service innovation. These perspectives show the different ways customers interact with providers and influence service development. They also highlight how varying levels of participation depend on available resources, motivation, and strategic fit. This framework will support the upcoming analysis by guiding how digital interactions and customer contributions are interpreted.

2.5 Relation between Theoretical Concepts

This section synthesizes the theoretical framework that will be followed in this thesis. The framework can be seen in Figure 2.5, including the different theoretical lenses that have been presented and how they connect theoretically. The provided model illustrates how service innovation and development, digital customer touchpoints and digital energy services relate and how they are centered around customer-centricity with data as the foundation.

In this thesis, digital customer touchpoints are understood as the specific points of digital interaction between energy service providers and their customers making them directly relevant for the innovation and development of services. Digital touchpoints allow for customer engagement, feedback collection, and usage monitoring, which in turn generates valuable data and customer insights that feed into the innovation and development process. The solid arrow from digital touchpoints to service innovation and development represents how the touchpoints inform the innovation and development process. Service innovation and development represents the process of creating new or enhancing current services based on customer needs and expectations. The goal of the service innovation and development process is to create new or enhance current services, these services in turn contain digital touchpoints making the process a reinforcing loop. Digital energy services and touchpoints drive customer-centricity which is illustrated by the dotted arrows.

Data acts as the foundation of customer-centric service innovation and development, having a critical role by generating and capturing valuable insights into customer behavior and needs. Since digital energy services and touchpoints generate data which feeds back into the development and innovation process there are arrows in both directions. The dotted frame around all this represents the boundary between energy companies' internal operations and their external environment. Digitalization plays a crucial role, reshaping the way traditional energy service providers innovate and develop their services. Furthermore, digitalization influences the constellations of actors involved in the energy sector, leading to new actor roles, collaboration opportunities, and increased competition shaping what services traditional energy service providers can develop and how they develop them. This framing is important to consider since it illustrates the interplay between internal capabilities and external pressure and opportunities. While service triads and tetrads are not explicitly mentioned in Figure 2.5, they are an essential part in explaining the external pressure/opportunities meaning the changing actor constellations and hence the effects of digitalization on traditional energy service providers.

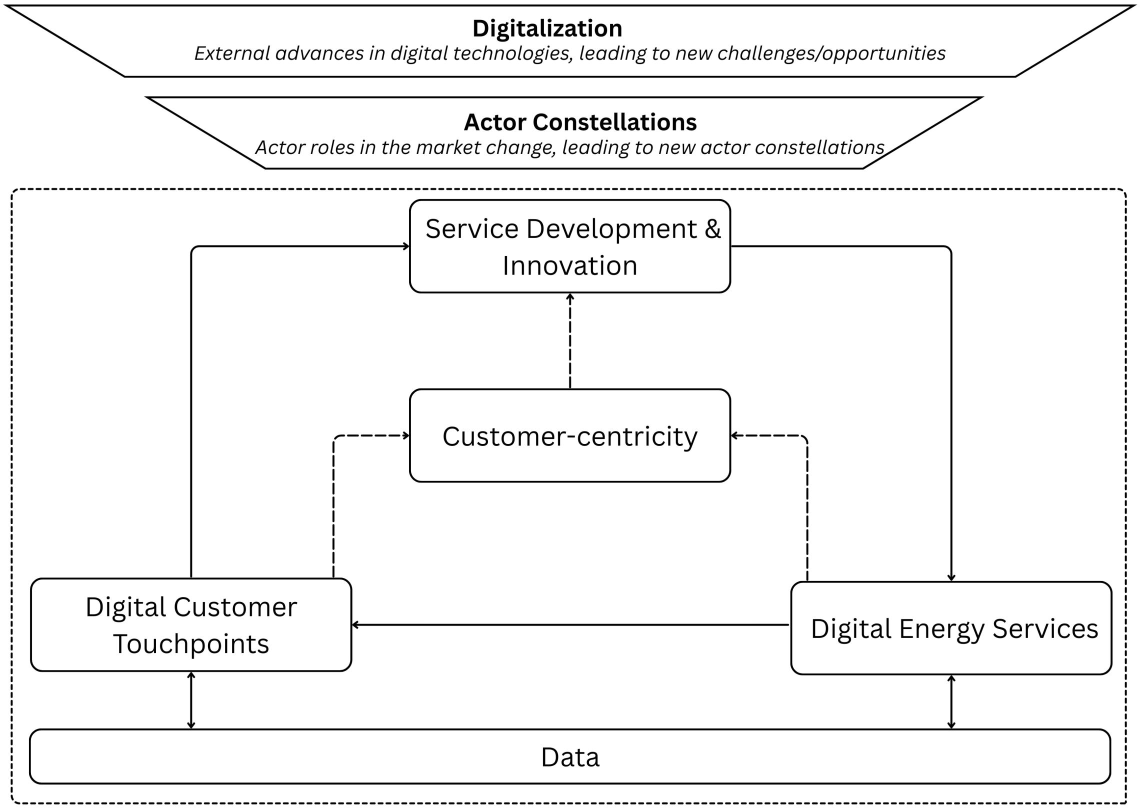

Figure 2.5: Visualization of the theoretical connections. Own illustration.

3
Methodology

This chapter will introduce the methodology that was followed during the study, explaining the research strategy, sampling process, data collection methods, and analytical approach. The purpose of the chapter is to ensure that the study is transparent and replicable, and to validate the methodology. By detailing the steps taken and the reasoning behind them, the chapter provides a foundation for evaluating the quality and relevance of the study's findings.

3.1 Research Design

This study adopts a qualitative research approach due to its exploratory nature and the need for deep and nuanced insights into what role digital touchpoints play in service development and innovation in the energy market. According to Bell et al. (2022), qualitative research emphasizes words and illustrations in its data collection rather than numerical measurement, which aligns well with the study's aim to gain a deeper understanding of how digitalization influences customer interaction and service development in the energy sector.

Given the complexity and ongoing evolution of digitalization within the energy sector, an area still relatively unexplored, this thesis does not begin with a set of predefined hypotheses. Instead, it aims to explore patterns and themes on the subject, in line with Jaeger and Halliday's (1998) explanation of exploratory research which is used when there is little prior research and the goal is to generate rather than test a hypothesis. Hence, there has been no predefined hypothesis in this thesis but rather an exploration of the subject.

A pre-study was conducted in the starting phase of the project to refine the research focus and to identify key stakeholders relevant to the main study. The questions for the interview guide were formulated during the pre-study to verify their clarity and relevance. The pre-study contained: 2 interviews with staff of the case company to refine the research focus and to test the interview guides. Furthermore, a preliminary review of relevant documents and literature was conducted to identify existing knowledge on digitalization, digital touchpoints, and service innovation and development in the B2B context. In addition, an exploratory scan of the energy market was carried out to identify companies and actors for potential interviews.

3.2 Sampling Process

The sampling process for the thesis was designed to ensure a selection of relevant and diverse respondents to achieve depth in the perspectives on how digitalization influences service development in the energy sector. Given the qualitative and exploratory nature of the thesis our sampling process contained a combination of purposive sampling and snowball sampling to identify actors that were of interest to provide insights into energy companies' service innovation and development and the effect of digitalization on this. The snowball sampling complemented the purposive sampling to get deeper insights into what actors were relevant for the interviews in the study (Bell et al., 2022).

Initially insights were gathered from individuals to which we had easy access such as employees at the case company. According to Bell et al. (2022) this provides a good starting point in the early stages of data collection. Interviews at the case company resulted in 6 interviews, including different departments and within different subsidiaries of the company. These interviews provided valuable insights into the energy sector and the company's operations. Simultaneously, purposive sampling was applied to identify relevant companies and organizations other than the case company, both suppliers and customers, in the energy market.

To further diversify the sampling population, snowball sampling was conducted by ending each interview with asking the respondent to suggest additional participants who could contribute valuable perspectives to the research. This approach helped ensure a broader range of perspectives and allowed the study to capture insights from actors that might not have been initially identified but are highly relevant to the research topic. The snowball sampling complemented the purposive sampling by providing insights from the initial respondents to include respondents that we did not think of ourselves. All in all, the result of the sampling process can be seen in table 3.1.

3.3 Data Collection

Interviews were used as the main source of primary data in combination with literature (and case study/benchmarking) as secondary data. This data was then compiled, interpreted and analyzed in order to answer the research questions mentioned previously. In total 20 participants were interviewed on 15 occasions, with two interviews being group-interviews. This process continued throughout the duration of the thesis project.

The interviews conducted during the study were semi-structured and held with help of an interview guide while still allowing for flexibility in the interview process (Bell et al., 2022). The flexibility in the semi-structured interviews allowed respondents to elaborate in order to open up aspects of the issue that had yet to be considered (Bell et al., 2022). The interview guide was structured into priority 1 and priority

Table 3.1: Interviews conducted during the study, sorted by type of actor and Interview date.

Respondent	Type of Actor	Interview Date	Duration
ESP1	*Energy Service Provider*	2025-02-25	75 min
ESP2	*Energy Service Provider*	2025-03-06	60 min
ESP3	*Energy Service Provider*	2025-03-07	75 min
ESP4	*Energy Service Provider*	2025-03-11	60 min
ESP5	*Energy Service Provider*	2025-03-13	50 min
ESP6	*Energy Service Provider*	2025-03-13	50 min
ESP7	*Energy Service Provider*	2025-03-13	50 min
ESP8	*Energy Service Provider*	2025-03-19	50 min
ESP9	*Energy Service Provider*	2025-03-25	80 min
ESP10	*Energy Service Provider*	2025-03-25	80 min
ESP11	*Energy Service Provider*	2025-03-25	80 min
ESP12	*Energy Service Provider*	2025-03-25	80 min
ESP13	*Energy Service Provider*	2025-03-26	60 min
ESP14	*Energy Service Provider*	2025-03-26	60 min
C1	*Customer*	2025-03-14	60 min
C2	*Customer*	2025-03-24	30 min
C3	*Customer*	2025-04-03	45 min
C4	*Customer*	2025-04-28	50 min

2 questions to allow for flexibility in time due to differences in the comprehensiveness of the answers. The questions were developed based on the study's research questions and the theoretical framework, focusing on key themes such as digital touchpoints, customer roles in service development, and the influence of digitalization on customer interaction. This ensured that the interviews remained focused on collecting data relevant to the conceptual areas explored in the thesis, while also allowing space for unexpected insights to emerge.

The goal of the semi-structured interviews was to gain an understanding of the customer needs but also to understand how companies other than the case company have dealt with the increasing digitalization of the energy market and how it affects their service innovation and development process. Furthermore, the interviews aimed at understanding in what ways a energy company can develop and innovate digital services with the customers' needs in the center. To achieve this, the interviews were split into different topics: the customer's role in service development, digital touchpoints in energy services, and market dynamics. This ensured a structured yet comprehensive exploration of the research questions. The thematic division helped align the interviews with the focus areas of the study, making it easier to get relevant data across different respondents while also facilitating comparison and analysis across interviews (Bell et al., 2022).

To gain insights from different perspectives, interviews were held with energy service providers and customers. The interviewed companies can be seen in table 3.1, showing the type of actor and the date of the interview. The interviewees have been anonymized and given generic labels where ESP# stands for Energy Service Provider and C# for Energy Customer. For the interviews, two different interview guides were used due to the difference in characteristics between energy service providers and customers. The interview guides used in the study can be found in Appendix A.

All interviews were held in Swedish and the aim was to keep each interview around 45 minutes. However, the majority of the interviews took longer than expected and lasted for approximately 60-80 minutes, while some were shorter. In total all interviews lasted between 30 and 80 minutes. All interviews were recorded using Teams when the interview was held online and using the recording-function of a smartphone in case of physical interviews. A rough transcription was taken using the automatic transcription feature in Teams, which was then reviewed and adjusted afterwards for improved accuracy to then be used in the analysis of the retrieved data. The quotes included in the thesis were translated to english by the authors, taking care to maintain the meaning and capture the context of the quote in question.

3.4 Data Analysis

To analyze the empirical data gathered during the study and to create a data structure, we opted to use the Gioia Method where the aggregated results from the interviews are rooted in the informants own words to provide qualitative rigor (Gioia, 2021). Meaning that the method enabled us to organize and interpret our respondents perspectives while still connecting to their original language and meanings (Gioia, 2021).

Our initial coding of the interviews began by thoroughly reading each transcript and marking statements that were meaningful for the thesis. Each marked statement was assigned a first-order In Vivo code that closely reflected the respondents' own language and perspective on the subject (Gioia, 2021; Miles et al., 2020). An example of this process is where the quote: "The customers is engaged through the development process, but with emphasis in the beginning when we test." was coded with "Customers are engaged in development" as seen in Table 3.2. The first-order In Vivo coding was done using Nvivo, a software that is specifically made for qualitative data analysis. This process lead to a gathering of quotes that had concise codes assigned to them while staying close to the original data to preserve the respondents view and interpretation.

Once the first-order codes were established, we proceeded the analysis by comparing the codes and grouping them to identify patterns and similarities (Gioia, 2021). Similar codes were then clustered into categories making up abstracted second-order themes to capture underlying concepts. To follow the previous example, the code "Customers are engaged in development" was clustered into the theme "Direct customer influence". We initially employed NVivo software for coding. However, to facilitate team collaboration we continued the coding process in Excel.

Finally, the second-order themes were synthesized into aggregate dimensions to capture the essence of our findings (Gioia, 2021). These aggregate dimensions link the qualitative data to broader theoretical insights. With the given example of a second order theme being aggregated into the third order dimension “Degree of Customer Influence on Service Innovation & Development”. Further examples of coding can be seen in Table 3.2 below.

Table 3.2: Examples of coding-process, with quotes, first order codes, second order themes, and third order dimensions.

Respondent Quote	1st Order Code	2nd Order Theme	3rd order Dimension
“And then they [external actors] came with various offers, and we needed to understand"is this a partner we want to work with? What is their role in the value chain? How can we ultimately create customer value together?" Because when business models change, many actors want to take over different parts of the value chain, and perhaps also claim part of the value themselves.”	Third-party actors take part of the value chain	Changing Actor Roles and Relationships	Digitalization driving changes in actor constellation in the energy market
“We are too slow to adjust the skills we need. I think other companies view the energy industry as lucrative, and with their agile capabilities, they can enter and take over certain layers of the business that we consider part of our value chain, simply because they're more efficient, faster, and better in the digital domain.”	Traditional firm to slow in adjusting their skills	Traditional provider vs. third-party actor	Digitalization driving changes in actor constellation in the energy market
“All major customers, so to speak, or not all, but everyone who follows up on it [their energy consumption] somehow, retrieve [their data] via API.”	customer retrieves data via API	Passive Touchpoint	Digital Service Innovation & Development Touchpoints
“It's a generative AI chat-bot which can speak hundreds of languages, ensuring that we can maintain a dialog with all customers regardless of background.”	AI chat-bot for customer interaction	Active Touchpoint	Digital Service Innovation & Development Touchpoints
“We get direct feedback through the app, for example [...] we hang out in different forums and look at what people are complaining about in various contexts. [...] And they're part of the actual feedback loop to make sure that what we develop is right and doesn’t miss the mark.”	Collecting feedback trough digital touchpoints	Customer Feedback & Insight integration	Degree of Customer Influence on Service Innovation & Development
“The customers is engaged through the development process, but with emphasis in the beginning when we test.”	Customers are engaged in development	Direct Customer Influence	Degree of Customer Influence on Service Innovation & Development
“I as a customer have the same expectation of perceived simplicity in the digital context regardless of which industry I’m dealing with”	Expectations are high regardless of industry	Customer Expectations	Degree of Customer Influence on Service Innovation & Development

3.5 Research Quality

Although there are different ways of judging the quality of qualitative research, Korstjens and Moser (2017) explain that the most well-known criteria for trustworthiness in qualitative research are: *credibility, transferability, dependability* and *confirmability.*

Credibility refers to the accuracy and truthfulness of the findings (Korstjens & Moser, 2017). In this thesis, credibility was enhanced through a transparent data collection process and systematic data analysis. The interview guide was tested and adjusted during the pre-study to ensure its relevance, and respondents were selected based on their expertise within the research topic. Additionally, all insights were continually reflected upon and discussed to avoid misinterpretation.

Transferability refers to the extent to which the findings can be applied to other contexts (Korstjens & Moser, 2017). As researchers, we cannot assess the relevance of our findings to every possible setting; therefore Korstjens and Moser (2017) argue that it is ultimately the reader's responsibility to determine whether and how the results apply to their specific setting. To allow readers to make a fair assessment on the transferability of this thesis a clear description of the participants and the research process has been provided.

Dependability is described by Korstjens and Moser (2017) as the consistency of the research process. To ensure dependability in this study, we have maintained clear and structured records throughout the research process, including the development and iterations of the interview guide, the sampling process, and the different stages of analysis. Additionally, weekly supervisions with both academic and company supervisors have been maintained to discuss and reflect on the progress and our interpretations.

Lastly, confirmability refers to the neutrality of the research process, meaning the extent to which bias has been minimized (Korstjens & Moser, 2017). The main effort to improve the confirmability in the thesis was the use of the Gioia method where the codes were based on the informants own language and expressions. This approach was used to ensure that findings were grounded in the respondents' perspectives, and to minimize the influence of external assumptions and bias on our part during the analysis.

3.5.1 Use of AI

In this thesis, AI (OpenAI's Large Language Model GPT-4.5) has been used for translations, language improvements, and writing support. At all instances where AI has been used, the results have been checked for accuracy to ensure that there is no incorrect or misleading information included in the report. We as authors ensure that the ideas and thoughts in this paper are our own original work. In line with Gatrell et al. (2024), who mention that the use of AI in research is acceptable as long as it is transparently declared in the paper and as long as the ideas presented are researchers' original thoughts, this subsection declares how AI has been used throughout the project.

3.6 Sustainability Considerations

Throughout the study, ethical, societal and environmental aspects have been considered and acknowledged. These considerations have been made in relation to the process and to the subject itself.

Ethically, all respondents were informed of the nature and purpose of the study prior to their involvement and gave their informed consent to participate (Miles et al., 2020). All participants were informed that the interviews were to be recorded before the recording started, with the purpose of the recordings being to transcribe and facilitate analysis. Additionally, it was clearly stated that the recordings would solely be available to us and that they would be deleted at the end of the project. To ensure truthful answers and to protect the identities of the respondents, anonymity was guaranteed and communicated before the start of the interviews (Miles et al., 2020). As for the study subject on digital energy services, an ethical concern is data privacy. Adams (2021) stresses the need for strong consumer protection in handling energy consumption data to ensure that the company's services comply with GDPR and cyber-security standards.

Socially, digital energy services can improve energy and cost efficiency but may exclude vulnerable groups such as elderly or those with low digital maturity (Díaz et al., 2021). Ensuring inclusive design and public trust through transparent communication are critical.

Environmentally, digital energy services support smarter energy use with the potential to lower greenhouse gas emissions (Díaz et al., 2021). However, they also bring challenges like increased energy demand from digital infrastructure and materials for connected hardware (Krumm et al., 2022; Adams, 2021). These issues should be addressed by energy providers by promoting sustainable sourcing, recyclability, and energy-efficient systems.

4
Empirical Findings

This chapter presents the result from the interviews conducted with energy service providers and their B2B customers during the study. The chapter is divided into three sections where the first one presents impacts that traditional energy service providers face with digitalization, following are the current digital customer touchpoints that exist between energy suppliers and their customers will be presented. Finally, a section is about the customer's influence on service innovation and development.

4.1 Changing Actor Constellations in the Energy Sector

As digitalization shifts the traditional operations and interactions within the energy market, companies have come to encounter several challenges. In the interviews, several of these challenges were mentioned, including for instance regulatory challenges, operational challenges, strategical challenges and changes in market structure and actor relationships. These challenges affect how incumbent energy service providers operate and what is possible for them to accomplish. One of the most mentioned challenges in the interviews was the change in actor relationships and roles.

During the interviews it was revealed that the digitalization has significant effects on actor roles and relationships. Interviewees discussed that new actors enter the market which has traditionally been very stable as to what actors are present. They also discussed the implications that this has on incumbent energy service provider's role. One interviewee discussed the difficulties incumbent firms face when new actors become part of the value chain and said:

> And then they [external actors] came with various offers, and we needed to understand"is this a partner we want to work with? What is their role in the value chain? How can we ultimately create customer value together?" Because when business models change, many actors want to take over different parts of the value chain, and perhaps also claim part of the value themselves. (ESP14)

This quote implicates that new actors in the market redefine the roles of incumbent actors in the market, forcing them to rethink their offering and what role they shall take in the value chain. The same interviewee went on with describing why new actors make it difficult for incumbent firms, saying:

> We are too slow to adjust the skills we need. I think other companies view the energy industry as lucrative, and with their agile capabilities, they can enter and take over certain layers of the business that we consider part of our value chain, simply because they're more efficient, faster, and better in the digital domain. (ESP14)

Implying that incumbent firms currently fall behind in the digital aspect since the new actors are quicker in their development of digital services. ESP8 mentioned that the fact that incumbent energy service providers fall behind may lie in the history they have, saying "Many energy companies are structured around a rather rigid legacy of being infrastructure providers. [...] And because of that, perhaps they haven't always viewed themselves as particularly sales-driven or customer-driven organizations." With multiple respondents mentioning that one of the biggest challenges currently is to figure out what role incumbent energy companies should take in the market.

Three of the interviewed customers mention they use digital energy services provided by third-party actors (i.e. actors apart from the traditional energy service providers) for things like data visualization, data integration, and real time data. One customer mentioned "We have something called Elvaco [digital energy service provider] [...]. You're probably familiar with Metry as well, right? They are another provider we've used somewhat for quality assurance; they've collected data values and then forwarded them to us in a similar way." (C1). A interviewee explained the third-party actor Metry when saying "We noticed that some bots were being used against us. This primarily involved the Gothenburg-based company Metry, which takes a user's ID, logs into a customer interface, extracts the data values, and then forwards them." (ESP3). The same respondent mentioned "we don't receive any data from third-party actors. Usually, the third-party actors are the ones who want data from us. It's a balancing act in some way, of course, we'd rather maintain direct customer relationships ourselves, but there are certain specialized services where we simply can't match their offering." Suggesting that this is an issue for incumbent energy service providers since this removes the control of the customer interface, essentially making them loose valuable touchpoints with the customer and control of the customer relationship. However, another customer mentioned that the increased complexity in their operations and their customers' demand requires them to make use of third-party actor's services, C4 said:

> We used to have a service from our energy provider for a very long time. We don't have it now, but we had it in the beginning [...] But as the companies grow and the needs of our customers, that is, tenants, increase, meaning they are interested in more data, and as we ourselves also need to work with the data, not just the energy we purchase but also how we then distribute it, we need something more. [...] So we use a complement to that, and we use Mestro, which is a system provider

> specifically for media monitoring [...] and then we input measurement data and map it out, so it's a bit of a double system. But at the same time, that's how we do it in order to be able to monitor our energy use. (C4)

Meaning that the increased complexity in the energy system, as well as the increased interest for data on energy consumption can not be satisfied by the traditional energy service provider. The interviewee continued by saying "It creates increased complexity to have multiple providers at the same time, so we want to consolidate. We want to bring more actors into the same platform. [...] It should be uniform, it should be the same." Implying that they need it to work in the same way when looking at facilities across different energy service provider areas.

In summary, the shift towards digitalization in the energy market presents multiple challenges for incumbent energy service providers. The entrance of new actors reshapes traditional roles, making incumbents reassess their positions within the value chain. New actors, more advanced in digital service development, outpace traditional firms, causing established energy service providers to struggle with maintaining their competitive edge. Customers increasingly turn to third-party digital services for functionalities like data visualization, which diminishes incumbents' control over customer relationships, affecting their influence and engagement with customers.

4.2 Digital Service Innovation and Development Touchpoints

During the interviews the respondents identified and discussed a variety of digital customer touchpoints through which energy service providers interact with B2B customers. Digital touchpoints are any point of interaction between company and customer that occurs by digital means rather than in person or through analog communication. Although our empirical findings made it apparent that the digitalization has been happening at a considerably lower pace in the B2B context compared to the B2C context, it also revealed that a growing effort to increase the digital interface towards business customers is being made in the energy market. In the context of energy services for business customers (e.g. real estate companies), from the empirical findings the most common digital touchpoints were categorized into two main categories in accordance with the second order themes established using the Gioia method. The identified categories are: *Passive Digital Touchpoints* and *Active Digital Touchpoints*. Active digital touchpoints being touchpoints where direct instances of communication or interaction occur, whereas passive digital touchpoints are touchpoints that enable indirect or one-way communication, where either party can access or observe information without direct engagement. The passiveness or activeness refers to the energy service providers state in the interaction. Together, they form the basis of the digital infrastructure that energy companies currently have in place to manage customer interaction, feedback, and data to support service innovation and development. This section maps out the digital touchpoints as described by the interviewees structured by the identified categories, including their purpose for service innovation and development, beginning with Passive Digital Touchpoints.

4.2.1 Passive Digital Touchpoints

The most commonly mentioned digital customer touchpoint in all interviews that existed between energy service providers and their customers was web-based customer portals, often referred to as "Mina Sidor" ("My Pages" in English). This touchpoint serves as a self-service platform with a gathering of digital touchpoints where customers can log in to access their data, handle invoices, perform basic energy analysis, and in some cases buy additional premium services without the need for the supplier to be present in the interaction. Passive touchpoints like this then allow customers to carry out actions and achieve intended goals without the help of the supplier. Another digital touchpoint similar to My Pages is the app, which was also mentioned by all interviewees. However, according to the interviews the app is targeted at small business customers with very few facilities, customers with multiple facilities are referred to My Pages. Although all energy service providers in the study offered such a service to their customers, the quality and content of it varied.

ESP3 mentioned that they have a mature customer portal for business customers that has been in operation and developed for over a decade. The respondent, responsible for the development of the portal since its beginning explained its purpose as:

> It's our web portal for business customers, we've had it for 12 years [...] the idea is to take the data we have on the customer (and other data sources) and deliver customer value in a digital format. We haven't just put out data like "here are your meter values, here are your invoices", we've combined it. We have both extra services in combination with the data, and what we call premium services. So we actually sell digital services to business customers [through the portal]. (ESP3)

In other words, the customer portal provides account information and usage data, but also additional analytical tools and premium services. Making it a digital touchpoint which is not merely informative but also a portal for delivering digital energy services and increased customer value.

In a similar manner, another energy service provider described their digital customer portal as an environment where "Customers find all their invoices, they find summaries, reports, and basically all the data they want" (ESP2). The respondent then went on to say that the portal and e-invoices are their key digital touchpoints: "The digital touchpoints we have with the customer are essentially the invoice [...] and our 'My Pages' solution." (ESP2). Suggesting that some energy service providers still rely heavily on physical communication and meetings in the B2B context, further strengthened when he said “The larger the customer and the larger the contract, the more physical and personal contact is necessary to build trust.” continuing by saying “In the digitalized world, it’s like if you invite customers to a physical event, people think it’s lavish and honest. They like that.”.

One of the key benefits these passive digital touchpoints, mentioned both by providers and customers, is the easy access to and centralization of data without the need for supplier involvement. A interviewed customer said “We use it, we like it and think it’s good precisely because they’ve gathered water, electricity, and district heating [data] in one place.” (C2). Another customer emphasized the ease of access to data and mentioned: “At some energy companies we need to ask for it [data] because we cannot find it ourselves, whilst we can easily get it ourselves at other companies. (C1)” building on this by saying one of the most important things for them as customers is “That it is easy for us to get it [data] on our own as a customer”. An energy provider continued in this line and argued that this is beneficial also for the providing company by saying:

> We need to make sure that it is easy to access and use this [data] [...] We need to assume that the customer shall have the ability to do as much as possible themselves since this frees up time on our end.

Essentially meaning these kinds of digital touchpoints can potentially lead to internal efficiency and that they can to save time so that energy companies can focus on more complex issues.

The target customers for these digital portals was brought up by multiple respondents to be small to medium sized customers. ESP13 mentioned that “Small- and medium-sized companies are the target-group for My Pages. [...] Large customers that are operational across different grids have no use for such a service”. Another respondent strengthened this by saying “The behavior and needs of small companies are similar to private customers, so these we recommend to use My Pages” (ESP3), further agreed upon by ESP14 who said “We want to handle small [business] customers like private customers, with automatic flows and self-service so that we can put effort on the larger customers with complex needs”.

All interviewed energy service providers mentioned they have or are currently implementing APIs for their larger customers, where they can gain access to their data and integrate it into their own systems or third-party services. ESP2 mentioned that “All major customers, so to speak, or not all, but everyone who follows up on it [their energy consumption] somehow, retrieve [their data] via API.”. Followed by ESP3 who said “We could also say we don’t want to share the data, but instead we’ve created a service called Energy Data API. Here, we sell [data], charging for the service, allowing third parties to go in and retrieve the data.”. On the notion of APIs ESP8 explains this behavior: “We see that business customers have different needs. Not everyone wants to log into a portal to view data; some prefer to work with their own measurement values in their own systems [...] to create a consolidated overview.". Showing the importance to cater to the differing needs and preferences of customers.

Additionally, websites and social media were mentioned in the interviews as ways to inform customers, with the website being important in the B2B context since it is often the first encounter between provider and customer. ESP8 mentioned "our website generates extremely much traffic and is important through the entire customer journey, from generating interest to the customer making a decision and acting on it".
There were also notions on some additional passive digital touchpoints such as FAQs that were often integrated in websites, educational content also available on websites, and other types of guides that can help customers. These were usually located on the external website, meaning that it is available for everyone to see, not necessarily requiring users to log in. One interviewee mentioned that these types of touchpoints do not provide suppliers with any usable data since there is no way to know who has interacted with it.

In summary, passive digital touchpoints are an important part of energy companies' digital interaction with B2B customers. The findings show that they are widely implemented across different companies, whilst differing in its functionality and quality. To engage customers and increase the usage of such touchpoints, efficient communication is of importance. Energy service providers also acknowledge the differing preferences of their customers, where large customer may prefer to access their data and work with it in their own or third-party systems.

4.2.2 Active Digital Touchpoints

In addition to passive digital touchpoints, energy companies use various active digital touchpoints to communicate and engage directly with B2B customers. Active digital touchpoints include for instance emails, live-chats, chat-bots, AI chat-bots, webinars, and electronic invoices, to mention the most recurring ones. Beyond facilitating communication, these digital touchpoints also play a role in the development and innovation of digital energy services. The interviews provided insight into how these are used and the purpose of them.

One fundamental active digital touchpoint is email through which for instance newsletters are communicated to customers or through which customers can directly reach out in case they have any issues. Similar to email, interviewees also brought up web-based contact-forms as a digital touchpoint. One interviewee brought up marketing automation as a tool they use for communication saying:

> It's like a dialog that is triggered by specific interactions. When a customer does X or Y, it triggers a flow of automated customer dialog. It can be for instance when a contract is expiring it triggers a flow of information with the aim to bring the customer to action through for instance emails or push-notifications.

Emphasizing the importance of active digital touchpoints and that the communication with customers needs to be tailored which can be achieved by triggering flows of information through certain points of data connected to the customer.

Another active digital touchpoint brought up in the interviews as being important was the invoice. ESP2 mentioned in the interview that "One of the most important digital touchpoints we have is the invoice, which in 99 cases of 100 is digital". Why this touchpoint is of importance was brought up by ESP13 saying "The invoice is the only point of interaction with customers who do not use any of our other channels". The same interviewee went on by mentioning that "This makes the invoice important to activate the customer and to bring them to use our other channels by including information on the invoice itself".

Further important active digital touchpoints brought up by multiple respondents were webinars and online events. ESP2 mentioned "we host webinars four times a year for current and potential customers." Highlighting the importance of the channel to reach out to many customers simultaneously. Providing an important channel for informative communication and to discuss with and engage customers.

Another one of the touchpoints that was brought up during interviews was live-chat solutions, on which there were different approaches on how to implement it. The differences in opinion were to as if the live-chats should be manned by staff or if AI was viable. ESP8 is one of the actors that has opted for an AI solution in its live-chat saying that "It's a generative AI chat-bot which can speak hundreds of languages, ensuring that we can maintain a dialog with all customers regardless of background." Emphasizing the benefit of AI's adaptability to the customer background. On the other hand ESP11 said that "Each time we tried to implement a chat-bot, customer satisfaction got worse. And each time we put humans on the chat satisfaction rose significantly." continuing by saying "With AI you [Energy service providers] can achieve a human tone and feeling, but if there is not enough transparency there is a significant risk that it backfires and make the experience catastrophic.". These examples highlight the need to thoroughly evaluate the consequences new digital services and changes to existing digital services have on customer experience.

Furthermore, digital customer panels/forums were mention as digital touchpoints that do not only provide the supplier with feedback on new features but also provides the customers with information proactively. Instead of waiting for the customer to reach out with questions, complaints, or suggestions, the supplier asks its customers by pushing out questions periodically creating an active dialogue between supplier and customer. This gives the supplier the possibility to reach specific customers where ESP13 mentioned "We can set display rules [...] for example, everyone who logs in with an admin role should see this question [...] we can filter which target-group we want to see the question". This then allows suppliers to pin-point what customers they want feedback from and essentially customize the information for them. This targeted communication is a proactive and personalized strategy where customers can provide feedback on issues particularly relevant to their specific context. The value of this approach was emphasized by ESP13 when saying “Having customers that are willing to provide feedback on a continuous basis is extremely valuable”.

The interviews also highlighted other active digital touchpoints although not extensively covered, alerts and updates were mentioned. Through digital touchpoints, suppliers can send alerts and updates connected to customer specific cases. One example was brought up by ESP3 who said “when a customers usage patterns deviate from the expected usage we can send an alert that lets them know something is wrong”. This could also be applied to upcoming changes in pricing models, regulatory changes, or new offerings. These types of alerts and updates would typically be delivered through digital channels such as email or through notifications on the portal (My Pages). The idea is to inform and advise customers before they themselves realize they need to take action.

In summary, energy service providers utilize a variety of active digital touchpoints to engage with their B2B customers, including emails, live-chats, chat-bots, webinars, and electronic invoices. Emails are a fundamental touchpoint for newsletters and customer inquiries. Invoices are also key for customer interaction, as highlighted by some interviewees. Webinars and online events are effective for reaching many customers simultaneously, providing platforms for engagement and information sharing. Websites and social media serve as initial contact points and further inform customers. The implementation of live-chat solutions varies, with some companies using AI for adaptability, while others prefer human-staffed chats.

4.3 Customer Engagement in Service Innovation and Development

This section details how customer feedback and insights are gathered, the ways customers directly engage in service innovation and development, and to what customer expectations exist on digital energy services in this era.

4.3.1 Customer Feedback & Insight Integration

All interviewed energy service providers stressed the importance of gathering customer feedback and insights as an essential part of service development multiple channels for customer input were identified. For instance, one energy provider has implemented a structured approach to acquire feedback through a digital customer panel using a tool obtained by a third-party supplier. This tool allows the company to pose questions directly to a selected group of customers on a regular basis and collect their opinions. As ESP13 described,

> This service allow us to invite participants, either private individuals or representatives from companies to answer questions we send out. For

> example, we can record a short video on our phone asking something like, "What do you usually look for when you log in to My Pages?" participants then submit written responses. We have used it to test different ideas, such as asking, "How would you feel about using BankID instead of a password?

In other words, through this panel, the energy service provider can rapidly measure customer reactions to potential changes, such as introducing BankID login. The panel also helps to uncover any concerns or unexpected uses. ESP13 further explains that in this case the panel feedback indeed revealed that some customers were using workarounds like data-scraping robots, information which led the company to consider providing a proper service instead. This direct channel illustrates how customer insights are proactively integrated into the process of digital service innovation and development.

Notably, the iterative, agile approach to service development was a common theme, enabled by customer feedback. Instead of developing digital services in isolation internally companies are breaking down development into smaller increments and incorporating user responses at each step of the development- and innovation-process. ESP13 described how they adopt Minimum Viable Product (MVP), releasing small features and then observing how customers react: “We focus on taking it in small parts, we release something and see what the customer do and how they react, then we add a bit more, instead of doing a full Waterfall process”. This approach has occasionally resulted in missteps, but because each increment is small “We might have driven into the ditch once or twice, but it was such a small part that we could fix it” (ESP13). The key is that the customer behavior and reactions guide upcoming development. Digital service features that confuse or frustrate users are reconsidered early, and successful elements are built upon.

Apart from digital methods, 12 out of 15 interviews state that traditional physical customer interaction remains an important source of insight that feeds into the development and innovation of digital services. ESP8 emphasized that data from actual face-to-face or personal contacts is also fed back into development discussion: “There is web data, but there is also data that comes from physical contact which is important to translate to the development of digital services”. According to ESP8, these insights can highlight needs that might not surface through automated data collection, ensuring that the "Voice of the customer" in all forms is integrated into service development.

In summary, the findings show that energy service providers are actively seeking customer input at multiple stages the service innovation and development process. Including, upfront via surveys and panels, during development via iterative testing and feedback forms and after launch visa satisfaction measures. According to ESP13 this versatile integration of customer feedback helps to ensure that new digital services are grounded in actual user needs and preferences.

4.3.2 Direct Customer Influence

Beyond passive feedback mechanisms, the interviews revealed instances of customers playing a direct and active role in shaping service offerings. In some cases, customers are involved throughout the service innovation and development process in a co-creative fashion. Whereas in other processes, the influence is indirect through usage patterns or demands. This section highlights how and to what extent customers directly influence the digital service development.

Some energy service providers actively involve customers as development partners. A manager at one provider states that “The customers is engaged through the development process, but with emphasis in the beginning when we test”. In practice, this means that before fully developing a new digital feature, the company actively seek a "Thumbs up or down" from the customers to get an evaluation. If customers give a negative reaction but the team still believes in the idea, they dig deeper to understand the misalignment. The manager explains this by “Is it thumbs down? Then we ask, what is causing pain for the customer? How can we frame it so they see it from our perspective? Or do we realize, wait, they see it differently, then we need to do it another way”. This dialogue can lead to either altering the design or sometimes deciding not to proceed. After this initial testing, customers continue to influence the process. As new features are introduces, the company monitors both feedback and usage pattens, and make ongoing adjustments accordingly. as another manger puts it “In this way, customers become part of the development loop”. The customers thereby become a part of the whole development loop. They help shape requirements, test early versions and guide refinements.

However, not all companies engage customers so directly. The extent of customer involvement can depend on the provider’s strategy and the nature of the service. For example, the representative from another large energy service provider acknowledged that their development of their customer portal was largely driven internally, with relatively low direct customer co-design. The manager explains that they had the “Philosophy that the customer portal is a tool for the customer”. But they did not systematically employ formal customer workshops or councils during its initial development “we haven’t really used those methods of going out and asking the customers and sitting with them... we had that as inspiration, but we didn’t fully do it”. Instead, the company relied on internal insight and the expertise of their team to build the first versions of their customer portal. Over time, they did incorporate customer feedback in updates, but the initial influence of customers was indirect. This contrast indicates that while all companies value customer input, the mode of influence ranges from consultative to collaborative. Some lean on customers to guide every step, iterating with continuous input, whereas others develop a solution they believe will help customers and then seek feedback post-launch.

Another form of direct influence comes from customer-initiated requests for new capabilities. B2B customers, especially large ones, often have specific needs that can push a provider to enhance a digital service. One of the interviewed customers gave an example, they wanted the ability to integrate the energy service provider’s system with their own building management system for district heating. Initially, the energy provider's solution did not allow this, but "now it is open", meaning the utility adjusted its service to permit the customer's control system to directly regulate the heating valve. This change was essentially driven by the customer's insistence that they be allowed to "do it themselves" for optimization purposes. The same respondent also expressed a desire for direct access to meter data through a standardized interface, so that they could consolidate data from multiple suppliers. Such demands from customers can strongly influence the development road-map, which can be connected to that several energy service provider respondents have started to develop APIs to accommodate this need. This is a clear instance where the customer's voice translated into a concrete service innovation.

It is also worth noting that market dynamics empower customers to influence innovation. Several respondents pointed out that if incumbent energy companies do not meet emerging customer needs, new market actors will. For example, the rise of third-party energy management services and tech-savvy entrants means customers have alternatives. One respondent described how "It's cooler to be a customer of Tibber than of an old mossy energy giant", continuing with drawing a parallel to how an online bank disrupted traditional banks. This kind of competition gives customers more power. Their preferences can directly influence what gets developed, because companies risk losing them to more innovative rivals. To stay relevant, traditional energy service providers are now involving customers earlier in the process of service innovation and development and listen more closely to their input.

4.3.3 Customer Expectations

The interviews underscored that customer expectations in the energy sector have evolved significantly due to digitalization. B2B customers now anticipate a level of service and convenience comparable to what they experience in other industries. Respondents consistently noted that today's customers expect digital solutions to be easy to use, accessible and personalized due to it becoming the norm in other sectors they use like finance, retail, or telecom. Several key themes emerged regarding these heightened expectations.

Firstly, customers expect greater convenience and simplicity in their interactions. ESP8 summarized the findings from and industry study, noting that the top drivers of customer satisfaction across industries are attributes like "Digital, Easy, Personal, Sustainable, and Price-worthy" services. The same respondent emphasized that the "Digital aspect is extremely driving, if a company can meet the digital need, which equates to making things easy, it greatly affects customer satisfaction". This insight align with the answer of the majority of the respondents. Where customers that are used to intuitive apps and instant online services carry those expectations into their dealings with energy suppliers.

All interviewed energy service providers acknowledged a gap between customer expectations and traditional energy industry offerings. One manager admitted that compared to other sectors, energy companies have room to improve: “In our own industry comparisons we’re doing very well, but compared to outside our industry we’re not top notch”. This quote was in reference to survey results from Svenskt Kvalitetsindex (SKI), where the respondents company scored high in customer satisfaction relative to competitors, but the same customers would rate the best companies in other industries even higher. The implication is that customers benchmark their experiences broadly. As ESP8 put it, customers do not make allowance for the energy sector being complex: “I as a customer have the same expectation of perceived simplicity in the digital context regardless of which industry I’m dealing with”. The respondent further explains this phenomenon as "expectation spillover", meaning that energy service providers are pushed to match the user experience standards set by leading digital companies elsewhere.

Another aspect of rising expectations is the desire for more proactive and customized services. In 10 out of 15 interviews it was clearly stated that large B2B customers expect their suppliers to understand their needs and offer tailored solutions. One respondent made the example of how a typical large real estate firm would manage their energy data. For such a company, with hundreds of metering points, using a standard web portal to manually check each facility’s data is impractical. Their expectation is for the energy provider to provide direct data access so they can “Fetch their information, interpret it and analyze it in their own systems ”. In other words, integration capability is an expectation, the digital service should cater to customers who want to incorporate energy data into their enterprise systems. However, not all customers will have this expectation, but the larger ones do, and meeting it is part of being customer-centric for that segment.

In contrast, small and medium-size B2B-customers expect the energy service provider to do more of the analytical work and provide insights directly through a user-friendly interface. All except one interviewed energy service providers state that they treat their small B2B-customers the same way as B2C-customers, meaning very little personal communication and relying on their standardized digital channels. A recurring theme among respondents is that medium-sized B2B customers are particularly challenging to accommodate. One respondent, ESP4, explained that while their largest customers are managed through close personal relationships, medium-sized customers often fall between personal service and full digital self-service. The interviewee noted: “We have a large cluster of medium-sized companies, where we lack customer data, we don’t fully know who they are, how to help them, or how to take care of them.” According to ESP4, better customer classification and data utilization are needed to determine which customers should continue to have personal contact and which can be more effectively supported through digital channels. Without improved customer insight, digitalization efforts for this segment have not yet delivered their full potential. As she summarized, “If we had better control over our customer registry and data about who these customers are, digitalization would help us even more.”

5
Analysis & Discussion

This chapter will put the empirical findings in relation to the theoretical framework towards answering the three research questions of this study. Firstly, the customers' role in service innovation and development will be analyzed, part of this is also the changing market dynamics that result from customer behavior. Secondly, digital touchpoints in the energy market, and lastly how they are used in service innovation and development.

5.1 Changing Market Dynamics Affecting the Degree of Customer Engagement

The empirical findings indicate that new actors are establishing themselves in the market and that the roles of traditional firms' are changing, leading to a larger variety of actor constellations. To analyze these constellations, this thesis uses the theoretical lens of service triads and tetrads, originally presented by Wynstra et al. (2014) and Wagner et al. (2018). Although initially intended as a way to analyze outsourcing contexts and aftermarket service delivery dynamics in manufacturing firms, these frameworks are also applicable for digital energy service actor dynamics. By taking the view of non-linear relationships service triads and tetrads help explain the evolving dynamics in the energy sector where third-party actors are increasingly common. To understand how the changing market dynamics in the energy sector affect traditional energy service provider's customer interactions, and by extension their ability to innovate and develop customer-centric services, this section will analyze and discuss the various actor constellations in the market.

Additionally, customers are becoming more active participants in the innovation and development of services, not just as consumers but as co-creators and partners in the process. This section will explain how the interactions between traditional energy service providers and customers change, depending on third-party actors entering the market and customers choosing them over traditional firms. Additionally, it will examine how the different actor constellations change customers' overall engagement in the innovation and development of services in traditional providers. Together, these perspectives will contribute to answering RQ1 by examining both the structural and relational ways customers engage in the innovation and development of digital energy services.

5.1.1 Actor Constellations that Inhibit Customer Engagement

The observed actor constellations are interpreted through the lens of service triads and tetrads (Wynstra et al., 2014; Wagner et al., 2018). To get a comprehensive understanding of the constellations in the energy market, the triads and tetrads include energy service providers, third-party actors, customers, and end-customers. The illustrations used to visualize the constellations include three different kinds of arrows, one visualizing the physical value delivery meaning energy (heat, electricity etc.), one illustrating digital value delivery meaning digital energy services, and one visualizing the direct or indirect flow of data derived from digital touchpoints. The empirical findings revealed that customers use digital energy services from both traditional and third-party energy service providers. What seems to drive customers to use third-party actors is their need for more advanced services where they for instance can integrate usage data from multiple geographical locations and use advanced analytical tools.

The empirical findings showed that some customers exclusively used services provided by third-party actors, making the traditional firm's touchpoints with the customer scarce since the only value delivered to the customer is physical energy. This indicates that third-party actors in these cases deprive traditional firms of valuable customer insights and data since this situation shifts the customers use of digital touchpoints to the third-party actor as seen in Figure 5.1.

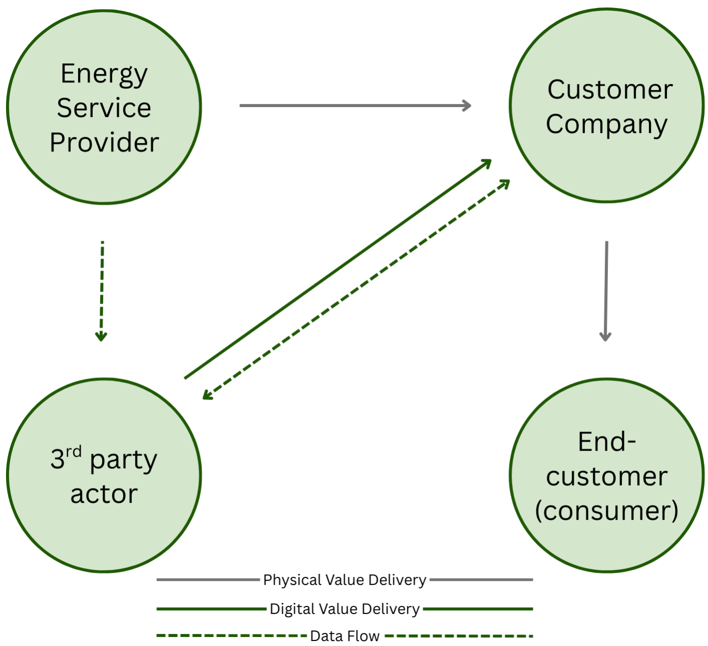

Figure 5.1: Customer uses digital energy services exclusively from third-party actor. Own Illustration.

In this actor constellation, the third-party retrieves data from the traditional provider either by accessing the customer's account or by purchasing the access directly.

These customers indicated that their needs are to advanced for the services provided by traditional providers. The customer's decision to use third-party services rather than the traditional provider is a form of implicit engagement in innovation and development, as it highlights a gap in the provider's current service offering without the customer explicitly notifying the traditional provider. However, this situation lowers the overall engagement from the customer toward the traditional providers' service innovation and development since they now use digital energy services from another actor.

Another example of an actor constellation that was observed was where customers use a third-party actor for advanced services whilst still using basic services from an traditional energy service provider. This shifts the use of some digital touchpoints toward the third-party actor resulting in reduced data the traditional firm can retrieve on their customers' needs for more advanced services. However, this constellation does not completely isolate the traditional provider since they still have some digital touchpoints toward the customer that can feed into service innovation and development. The limitation of digital touchpoints makes it important to focus on those digital touchpoints that are still in play. As in the previous constellation, the third-party actor accesses data through the customer or by purchasing it, represented by the data-flow arrow from traditional provider to third-party actor. This constellation can be seen in figure 5.2. Similarly as in the previous constellation, this illustrates that the traditional provider has a gap in its service offering, inferred from implicit customer engagement. Although to a lower extent than the previous constellation, this situation also lowers the customers' engagement toward the traditional provider's service innovation and development.

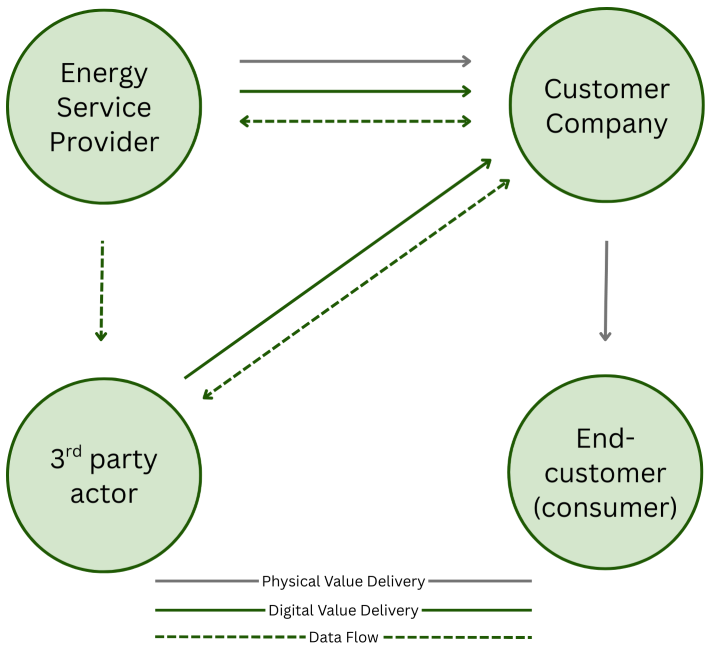

Figure 5.2: Customer uses digital energy services from third-party actor and traditional provider. Own Illustration.

The empirical findings also revealed that the end-customers are demanding more data on their energy consumption which led to third-party actor services being used to fulfill this need. This was currently not possible with the services provided by the traditional firm, shedding light on another constellation where the end-customer is included in the digital value delivery through a third-party actor as seen in Figure 5.3. Again, this is a constellation shaped by the customer, encouraging continued development on the traditional provider's service offering.

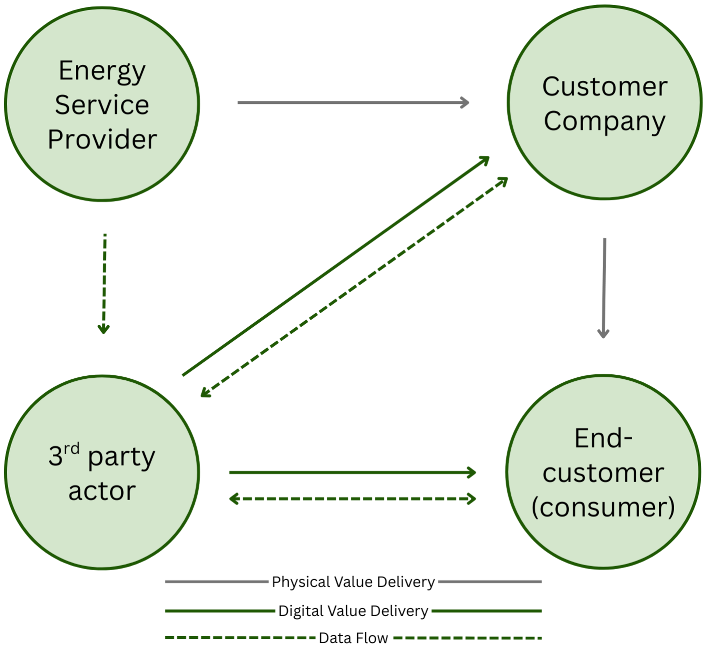

Figure 5.3: Customer uses advanced digital energy services from third-party actor to include end-customers. Own illustration.

Customers also engage in service innovation and development implicitly by benchmarking traditional providers' services against other industries such as banking and telecom. This was exemplified by several respondents as a challenge. Furthermore, implicit customer engagement can be seen when analyzing customer behavior, usage of services, and retention. For instance, low usage rate of a service can be a signal that something is missing.

In summary, the changing dynamics of the energy market challenge traditional firms' central role in the value chain. Third-party actors take parts of the interactions with the customers, highlighting the need for traditional firms to partner with or match these actors to stay competitive. Looking through the lens of service triads, tetrads, and S-D logic these configurations are explained, value is now offered outside of the traditional firm's offering and emerges through multiple actors. The different constellations affect the extent to which customers engage in traditional firm's service innovation and development since the access to customers through digital touchpoints varies depending on the constellation. At the same time implicit customer engagement provides traditional energy service providers with signals on gaps in their service offering or on the quality of their current services. However, traditional providers must manage their digital touchpoints and customer data to benefit from the implicit signals sent by customers.

5.1.2 Actor Constellations that Support Customer Engagement

While the previous section described how customers implicitly engage in service innovation and development through market behavior and expectations, this section addresses another important part of RQ1: how customers are explicitly engaged in the innovation and development of digital energy services. The findings show that customers in the B2B segment can play an active role in shaping digital solutions through feedback, requests, and co-development activities. This section will begin with describing how customer explicitly engage in service innovation and development and continue with describing the actor constellations that foster customer engagement toward traditional energy service providers.

Several energy service providers shared examples where customer input during development led to concrete changes in service functionality. ESP10 described how a customer requested integration between the provider's digital platform and their internal building management system, which resulted in modifications to the service offering. These types of requests represent more than technical needs, they reflect strategic engagement from the customer. According to customer segmentation theory, differences in customer characteristics such as organizational size, internal capabilities and strategic relevance can influence how and to what extent customers engage in service innovation and development (Cossío-Silva et al., 2016). This was reflected in the findings, where certain providers appeared to prioritize input from larger or more strategically and economically important customers during the innovation and development process.

How customer engagement is handled differs between companies. Some providers described structured processes for including customers early in development, while others rely more on internal knowledge and bring in customer input only after launch. For example, ESP7 explained that while their teams do collect customer feedback, the actual development work is usually based on internal expertise. This highlights a key difference between reactive and proactive approaches to customer engagement. As argued by Terho et al. (2012), value creation is more effective when suppliers actively seek to understand and integrate customer-specific needs throughout the entire development process. The findings suggest that when providers take a reactive approach, customers are brought in too late to influence the direction of the service. This limits the customer's role in service development and shows how internal strategy decisions define whether the customers are treated as co-developers or simply as a recipients.

These findings also reflect the logic of value co-creation as described in S-D Logic (Vargo & Lusch, 2016), where the customer is viewed as a resource integrator who helps shape value through interaction. In this context, the customer is not simply a recipient of the final service, but takes part in shaping its design and development. This type of engagement was visible in cases where customers were invited to give input during early stages of development, often through testing or customer panels around specific needs. While the extent of their engagement varied, these interactions show how customers can shape the direction and functionality of digital energy services when given the opportunity.

To understand customer's engagement further, the actor constellations that support and maintain customer engagement have been explored. Some respondents discussed partnering with third-party actors, where some already had ongoing partnerships. This would then imply that data is shared bilaterally between traditional firms and third-party actors as illustrated with the two-way arrow between third-party and traditional provider seen in Figure 5.4. In this constellation, the traditional provider's digital touchpoints are still intact and benefit them as well as the third-party actor. However, the traditional provider may in this case also benefit from the digital touchpoints that the third-party has. By maintaining the digital touchpoints with customers, this constellation also maintains the customer's engagement with the traditional provider's service innovation and development.

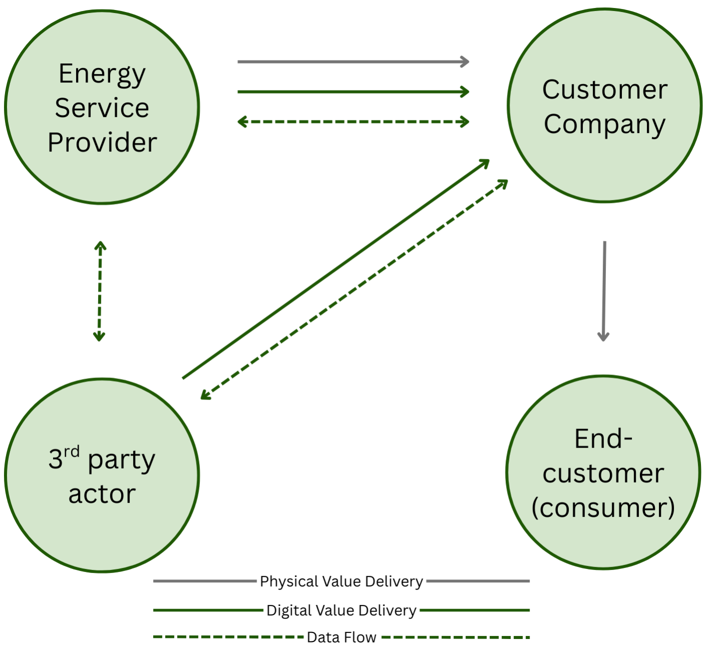

Figure 5.4: Traditional firm and third-party actor have partnered to deliver value. Own Illustration.

As for the last observed actor constellation, there are B2B customers whose needs are fulfilled entirely by the traditional firm. Hence, the third-party actor is excluded in the digital value delivery and the flow of information as seen in Figure 5.5. The customer interviewee for whom this was the case was a local real estate company and only operated within one grid district, making their needs less advanced. In this case the traditional firm remains in control of all digital customer touchpoints and can utilize them fully, maintaining the customer engagement.

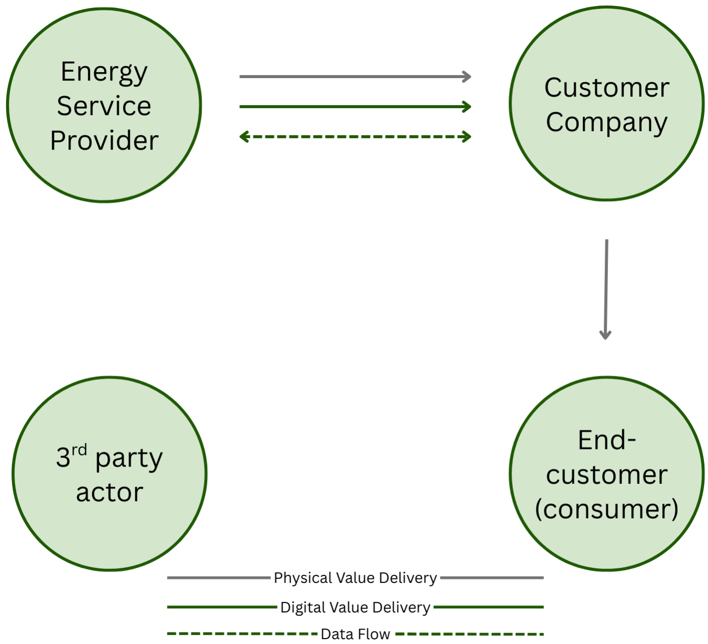

Figure 5.5: Customer uses digital energy services exclusively provided by traditional firm. Own Illustration.

Across the observed constellations presented in this and the previous section, S-D logic (Vargo & Lusch, 2004) helps provide insights. S-D logic states that value is created between actors and emerges through interaction, experience, and resource integration. In the energy sector, traditional firms, customers, and third-party actors contribute resources to create value. For example, the data possessed by traditional firms becomes a resource for third-party actors in providing their digital energy services to customers. In contrary, third-party actors could be seen to provide technological resources, partnering with traditional firms to provide customers with a digital energy services. These interactions create a dynamic service ecosystem (Vargo & Lusch, 2016), where outcomes are shaped mutually between actors. Traditional firms must navigate this ecosystem, stepping outside the internal view of NSD (Kindström & Kowalkowski, 2014). Wynstra et al. (2014) and Wagner et al. (2018) suggest that these triadic and tetradic constellations require coordination, quality control, and management of relationships. This is confirmed in the findings as traditional firms are situated in increasingly networked contexts where implicit customer engagement can help traditional providers navigate although overall customer engagement is being lowered.

Together, the analysis shows that customers engage in the innovation and development of digital energy services in both implicit and explicit ways. Implicitly, they engage through their expectations and by turning to third-party solutions. Explicitly, they contribute by giving feedback and taking part in development work. How much customers are engaged depends on the provider, which affects whether they are included as partners or kept more at a distance. These insights jointly address RQ1 by showing that customers play a central, yet context-dependent, role in shaping digital energy services, by either engaging explicitly or implicitly.

5.2 Digital Service Innovation and Development Touchpoints in the Energy Sector

The mapping of digital customer touchpoints helps investigate how energy service providers interact with business customers through digital technology. This in turn provides insights into how digital touchpoints are enablers of customer-centric service innovation and development. From the empirical findings it became clear that there is an increased focus on digitalizing customer interactions in the B2B context where it makes sense. Hence, the digitalization has lead to an increased focus on digital touchpoints between energy service providers and their customers, since they reshape the nature of their interactions.

It also became apparent that individual B2B interactions are often highly varied since they include multiple facilities, stakeholders, and actors which is in line with the theory presented in 2.3. For instance, the different actors within a customer company that interact with the energy service provider may have varying knowledge and digital maturity, making it difficult to adjust the interactions to the specific actors. Furthermore, business customers' needs largely vary since the different customer companies are heterogeneous in their structure; with some having few facilities and some having many; some having in-house energy storage and/or production etc. To account for these varying customer conditions and to answer RQ2, the touchpoints were categorized into active and passive based on the level of direct interaction they involve. This distinction provides valuable insights into how different digital touchpoints contribute to customer-centric service innovation and development, and why not all contribute equally. While passive digital touchpoints generate data on customer behavior and usage, active digital touchpoints allow for interactions where providers can ask questions, test ideas, and engage the customers directly, allowing them to innovate and develop services together with customers. Here we connect digital touchpoints to the service innovation and development process, seeing them as bi-directional enablers of customer-centricity, making them active inputs to the process rather than merely being points of interaction.

The categorization of passive digital touchpoints includes touchpoints where there is no direct communication between the customer and the providing firm, meaning one-way interactions. Passive touchpoints included for instance web portals, APIs, and mobile apps. These digital touchpoints essentially empower customers to carry out touchpoint actions themselves without the presence of the providing firm. Passive touchpoints were consistently implemented by providing firms, with all respondents offering for instance a web-based customer portal; a self-service site where customers can view invoices, energy consumption data, and basic analytics. In S-D logic, these touchpoints correspond to an interface that allows for value co-creation, relating to axiom two (Vargo & Lush, 2016). Although the categorization adds an additional layer, passive digital touchpoints can be related to Lundin and Kindström's (2024) dimensions and capabilities. The resource dimension here is the bilateral sharing of knowledge and data, the environment dimension is the online customer portal where customers are able to perform actions (action dimension) on their own terms. The significance of passive digital touchpoints is their contribution to service innovation and development without requiring direct interaction. From these touchpoints energy providers can derive behavioral patters, usage data, and preferences without directly interacting with the customers, derived from implicit customer engagement. However, these digital touchpoints have limited effect on innovation and development since the derived data only reflects passed events, opinions, and needs.

Active digital touchpoints are where there is a high degree of direct interaction where either the customer or the supplier initiates contact to elicit an action from the other actor (i.e. two-way interactions). From the empirical findings examples of active touchpoints are online customer portals, chats, email, electronic invoices, and webinars. Active digital touchpoints allow for immediate answers to questions, dialogue, or support independent of the location of the actors involved. At active interactions it became apparent that the balance between physical and digital was of importance. This corresponds well to Lundin and Kindström's (2024) capability on hybridizing environments, emphasizing that digital touchpoints should act to reinforce and support crucial physical touchpoints. Several energy service providers mentioned that they employ for instance dedicated key account managers to their large customers who have advanced needs to ensure there is a physical alternative to the digital touchpoints. In service innovation and development, active touchpoints act as the basis of explicit customer engagement, helping ensure that digital services reflect actual customer needs rather than guessed or assumed ones. The entirety of the identified digital service innovation and development touchpoints can be seen in Table 5.1.

Table 5.1: The digital touchpoints identified between energy service providers and their customers, categorized into passive or active.

Digital Touchpoint	**Type (Active/Passive)**
Web-based Customer Portal	*Passive*
Mobile App	*Passive*
API	*Passive*
FAQ	*Passive*
External Webpage	*Passive*
Online Guides	*Passive*
Email	*Active*
Live-chats	*Active*
AI-chat	*Active*
Webinar	*Active*
Online meeting	*Active*
Electronic Invoice	*Active*
Online Contact-form	*Active*
Online Customer Panel	*Active*

5.3 Using Digital Touchpoints for Digital Energy Service Innovation and Development

Having mapped the digital touchpoints present between energy service providers and their customers, we turn to how they are being used in the innovation and development of services, addressing RQ3. The interviews show that energy companies in some cases consciously incorporate customer input throughout the innovation and development process. However, it is also apparent that they still heavily rely on internal processes and knowledge, effectively blending NSD practices with S-D logic principles.

Many providers have changed their internal innovation and development principles to be agile and iterative. For example, one interviewee mentioned they use minimum viable product meaning that they implementing new features incrementally while collecting usage metrics and feedback through digital touchpoints throughout the process. This practice connects to NSD's emphasis on continuous monitoring of market needs through concept testing and feedback loops (Alam, 2006). Digital touchpoints generate real time data on usage, retention, and behavioral patterns while they also allow for easy feedback collection through for instance survey pop-ups etc. feeding into the innovation and development process.

On the other hand, S-D logic shifts the focus from an internal process view to a co-creative view where value is created across actors. The empirical findings show that several energy service providers actively include their customers in a co-creative capacity throughout the process. The use of for instance online customer panels where the provider actively asks questions to a select group of customers is an excellent example of when customers are part in shaping the content and design of the services being developed through the use of digital touchpoints. In the service innovation and development process providers seeks customer feedback. This shows the shift in how customers are viewed, from being consumers of energy to being co-creators of value which corresponds to Vargo and Lusch's (2016) notion that the beneficiary is always part of value creation (axiom nr. 2).

However, the extent to which customers are included as co-creators varies. Much of the development and innovation process is still done exclusively in-house, depending on internal knowledge and expertise rather than drawing real insights from customers. Customers are included more in a reactive manner for the improvement of current services than in the innovation of new services. Simultaneously, energy service providers recognize the unique data that digital touchpoints enable, the issue is rather the handling of the data than the access to it.

Putting theory and practice together: traditional firms are effectively practicing a hybrid approach where NSD and S-D logic is combined. They still manage internal development roadmaps (as NSD suggests) but increasingly invite customer co-production (as S-D Logic encourages). The digital touchpoints themselves serve as enablers of this collaboration. A online customer portal not only delivers services but also captures usage data; a chat session not only resolves an issue but also generates improvement ideas. By viewing customers and digital touchpoints as resources that contribute valuable insights, firms create more customer-centric innovations.

In conclusion, the analysis shows that digital touchpoints and customer-centricity are tightly interwoven. Energy service providers use digital touchpoints to gather input and to prototype services to some extent, and they engage customers as co-developers in varying degrees. The theoretical lenses of NSD and S-D Logic together highlight these practices, structured development processes enriched by iterative testing (NSD) and multi-actor value co-creation (S-D Logic). The result is a more customer-centric innovation process, although one that must continuously adapt as the actor constellation and touchpoint landscape evolve.

5.4 Synthesis of Customer Engagement with Digital Touchpoints

This final part of the analysis brings together the key insights from the previous sections to highlight how customer roles and digital touchpoint design interact to shape the innovation and development of digital energy services. While earlier analysis focused on each research question individually, this section offers a broader perspective on how these parts are connected as seen in Table 5.6.

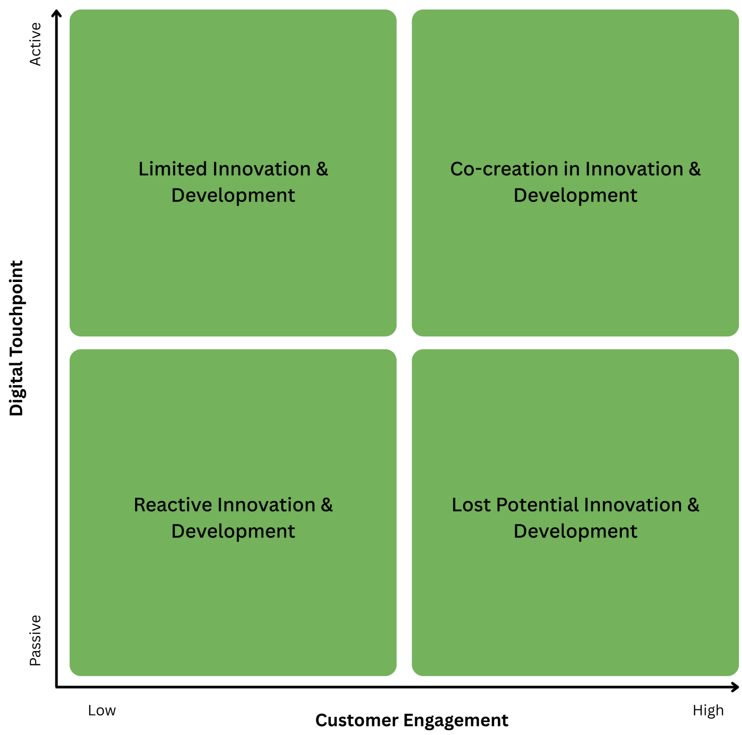

Figure 5.6: Matrix synthesizing customer engagement with digital touchpoints.

This framework highlights where innovation and development are supported and where it risks falling short. The findings show that some energy providers manage to match active customers with the right digital touchpoints, while others still rely on passive touchpoints or do not make it easy for customers to get engaged. This framework is a simplified way to understand how customer engagement and digital touchpoints need to match in order for digital service innovation and development to thrive.

In the *Reactive Innovation and Development* quadrant, customer influence is limited to behavioral data such as usage patterns, churn, or retention. Providers respond to this information, but the feedback loop is delayed and often leads only to incremental improvements rather then customer-driven innovation. A different challenge appears in the *Lost Potential Innovation and Development* quadrant. Here, customers are motivated to contribute insights, ideas or needs, but lack the appropriate digital touchpoints to do so. This creates a situation where useful input is close at hand, but never reaches the provider. The *Limited Innovation and Development* quadrant reflects the opposite scenario. Providers offer digital touchpoints for input, but customers show low engagement or remain passive. Even though the right digital touchpoints are in place and offered, the lack of active use means innovation and development still relies mostly on internal direction. In contrast the *Co-Creation Innovation and Development* quadrant represent the ideal state for customer-centricity. Both condition are met, where customers are willing to engage and are also supported by the right digital touchpoints. This leads to more direct interaction, shared learning and energy services that better match actual needs.

These patterns reflect earlier theoretical insights about value co-creation and service development, where customer involvement depends both on willingness and on how digital interaction is structured. We see this framework as a useful way to reflect on how well digital touchpoints and customer behavior actually align. The empirical findings show that many providers today operate mainly in the Reactive or Lost Potential quadrants. They collect useful data but do not enable meaningful dialogue, or they have customers who want to engage but are not given the chance. In both cases, valuable input is lost or underused.

To show how this matrix can be used in practice, we apply its dimensions to our case company. The company works with customer segments that fall into several parts of the matrix. For example, customers who rely on dashboards and self-service portals, without much explicit engagement, reflect the Reactive quadrant. At the same time, the company has introduced active touchpoints such as digital panels and webinars for some of their larger B2B customers. These efforts create conditions for those customers to move toward the Co-Creation quadrant. This example shows that it is not only about having digital touchpoints in place, but about matching those touchpoints with how different customers behave and what they are willing to contribute. For customers who are less engaged or prefer self-service, passive touchpoints can still be valuable by making information and functionality easily accessible without requiring direct interaction. Beyond assessing current positions, the matrix can also be used as a strategic tool. By mapping a specific customer

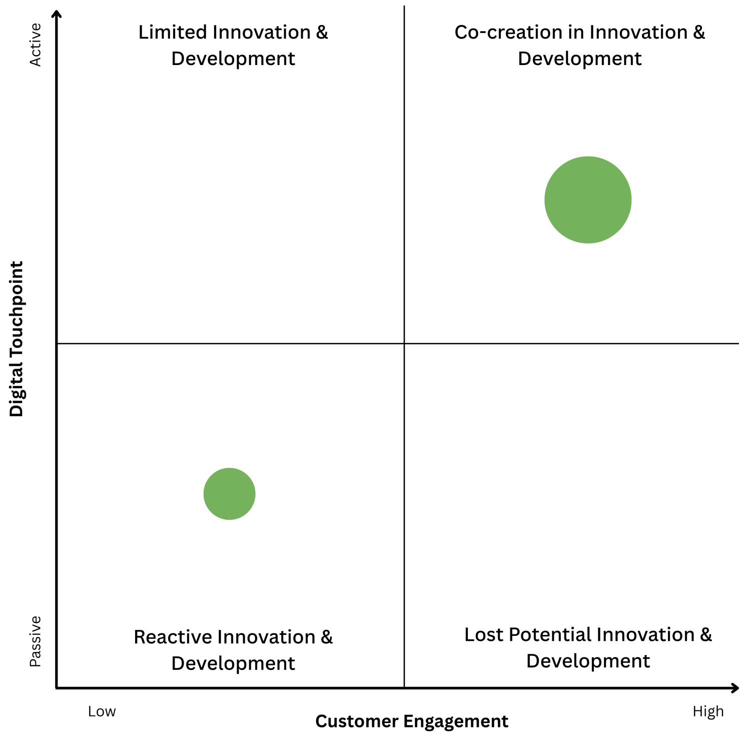

Figure 5.7: Visualization of the matrix in practice.

to one of the quadrants, providers can identify which types of digital touchpoints are needed to support or activate engagement and help shift that customer toward more collaborative innovation and development. The example is showcased in Figure 5.7, where the bubbles represent customers and the size thereof corresponds to a customer-segmentation criteria such as size of energy consumption.

By bringing together the findings from RQ1, RQ2, and RQ3, this matrix offers a clear way to understand how digital touchpoints and the degree customer engagement interact. It also sets the stage for the recommendations in Chapter 6, where we outline how energy providers can use the insights from this study to better align their digital touchpoints with their customer needs and behaviors to move toward more customer-centric service innovation and development.

6
Conclusion

This thesis set out to explore how digitalization affects how traditional energy service providers innovate and develop customer-centric energy services in a B2B context. Guided by three research questions, the study combined qualitative data from interviews with a theoretical framework drawing on concepts like New Service Development, Service Dominant logic, service ecosystems and digital touchpoint management. Structured by research question, the key conclusions will be summarized below followed by recommendations and future research opportunities.

RQ1: How do customers engage in the innovation and development of digital energy services?

The study shows that customers play an increasingly central role in the process of innovating and developing digital energy services. Moving from being mere consumers to being active co-creators. Customers explicitly engage in service innovation and development through active digital touchpoints with real-time feedback and pilot-testing, and implicitly engage through the use of passive digital touchpoints from which behavioral patterns, usage data, and new expectations. However, the inclusion of customers varies and traditional energy service providers still to a large extent innovate and develop using internal knowledge.

RQ2: What digital touchpoints that are connected to Service Innovation and Development exist between energy service providers and their customers?

The study identifies two categories of digital touchpoints based on the nature of the interaction, passive and active digital touchpoints. These provide the foundational infrastructure of how energy service providers interact with their business customers. Passive touchpoints include web-based customer portal, mobile apps, APIs, and FAQs, offering one-way information and self-service functions. Whilst the active digital touchpoints include emails, live-chats, chat-bots, AI chat-bots, webinars, online meetings, digital customer panels/forums, and invoices, facilitating two-way interaction and collaboration. The findings indicate that the number of digital touchpoints toward business customers is increasing, making the customer interface increasingly advanced. The categorization into passive and active digital touchpoints facilitates the understanding of how touchpoints foster service innovation and development. Passive touchpoints through indirect engagement, allowing energy service providers to derive for instance usage patterns and behaviors, and active touchpoints through explicit engagement, allowing energy service providers to directly interact with customers by for instance asking questions and discuss solutions.

RQ3: How do energy companies use digital touchpoints in the innovation and development of customer-centric services?

During the study it became apparent that digital touchpoints, whether active or passive, are not merely points of interaction between the providing firm and its customers. Digital touchpoints also act in a capacity as points of data generation where the customers' behavioral patterns, usage data, and retention can be gathered. They also allow energy service providers to directly include customers in the innovation and development process through real-time interactions through for instance digital customer panels. Although the benefits of digital touchpoints are being acknowledged and used to some extent when creating new and enhancing current services, there remains potential in utilizing them even further. However, this requires energy companies to properly manage their digital touchpoints and develop the capabilities needed to fully make use of their potential.

6.1 Recommendations

Based on the findings of this study, several recommendations can be made for managers and decision-makers within traditional energy service providing firms.

- Adopt the principal of categorizing digital customer touchpoints into passive and active.

Firstly, we recommend to adopt the practice of categorizing digital customer touchpoints into passive and active based on the involvement of the provider in the interactions. In this thesis, digital touchpoints in the energy sector have been mapped according to this principal which has proven helpful in understanding their usefulness for service innovation and development. However, we recommend firms to do this for their specific cases and for future digital touchpoints.

- *Adopt a structured approach to manage digital customer touchpoints.*

Secondly, we recommend energy service providers to adopt a structured approach to managing digital customer touchpoints. The study has found that digital touchpoints must be matched against the customers' needs, preferences, and degrees of engagement in order for the touchpoints to be useful in service innovation and development. Using the matrix seen in Figure 5.6 is a good way to do this by mapping different digital touchpoints against different customers'.

- *Segment customers based on engagement potential.*

Thirdly, we recommend that energy service providers improve how they segment their customers to better support customer-driven innovation and development. Instead of segmenting only by size or industry, providers should consider factors like engagement level, digital maturity, and willingness to contribute to service development. This makes it easier to match each customer segment with the right type of digital touchpoints. By designing touchpoints that reflect how customers actually interact, providers can support more customer-centric innovation and development.

6.2 Limitations and Future Research

While this thesis contributes to the understanding of digitalization in the energy market and how digital touchpoints can be used in service innovation and development, it is not without limitations. Firstly, given the nature of the study, being a master thesis, there has been a time constraint which has limited the sampling size and diversity. Without the time constraint, more actors could have been interviewed and a cross-sectoral study could have been carried out to establish a best practice on the topic. Secondly, the energy market is in a rapidly changing state, where dynamics change from one month to another, this makes the study represent a snapshot of the current state in the market. These limitations open up for future research topics. To mention a few:

- *Studies on digital touchpoint effectiveness.*

Further research could measure the impact that specific digital touchpoints have on customer engagement and satisfaction. This would allow practitioners to prioritize what digital touchpoints to invest in and optimize those for optimal contribution to service innovation and development.

- *Studies on digital touchpoint management in practice.*

The theory on managing digital touchpoints presented by Lundin and Kindström (2024) is highly relevant, although the empirical data in this study is not sufficiently detailed to support an analysis regarding touchpoint dimensions and capabilities. A study specifically looking into how traditional energy service providers manage digital touchpoint resources, actions, and environments in practice would be of interest.

- *Cross-sectoral investigation of digital touchpoint use.*

Digitalization takes place in all economical sectors, and during this study it became clear that the energy sector is not in the forefront. To establish a best practice in how digital touchpoints can be utilized for service innovation and development a comparative study with other economical sectors such as banking, telecom, or online retailing would be of interest.

- *Investigate regulatory challenges that traditional energy companies face.*

Since traditional energy companies are often municipality owned combined with their monopolistic position as grid-owners, the rules are not the same for them as for newly established actors. During this study, regulatory challenges were mentioned by some respondents although not thoroughly. Therefore it would be of interest to study the effects this has on their ability to develop new digital energy services.

6.3 Contributions to Theory

This thesis contributes to the theoretical understanding of customer-centric energy service innovation and development in digitalizing B2B contexts within the Energy sector. The main theoretical contributions can be summarized into four areas:

1. Added to touchpoint research in the energy sector.
2. Categorization of Digital Touchpoints into Active/Passive.
3. Applying the service triad and tetrad concept to explain service innovation and development dynamics.
4. Linking digital touchpoint categories to their innovation and development potential.

Since this study has resulted in rich data from interviews with energy service providers and their customers, we add to the body of touchpoint research specifically within the energy sector. Furthermore, the study focuses on digital touchpoints, adding also to this branch of touchpoint research.

While previous research has explored for instance the digitalization of customer touchpoints and the management of them this study contributes by categorizing digital touchpoints on the basis of interaction-level (i.e. wether the touchpoint is active or passive). This distinction offers a simple, yet useful analytical lens to asses specific digital touchpoints' contribution to service innovation and development. Furthermore, digital customer touchpoints have previously been applied mainly in the context of marketing, therefore this study broadens the view of digital touchpoints to the service innovation and development literature.

Service triads and tetrads have previously been applied to describe the dynamics of aftermarket service delivery, including the interplay between different actors. While this study has made use of the concept in a similar manner, it has been applied to a new context. This study contributes to theory by exemplifying the use of service triads and tetrads to describe the changing dynamics in service innovation and development, including how digital touchpoints and value delivery shifts between actors based on customer behavior.

Lastly, this study contributes to theory by linking the before mentioned digital touchpoint categories to service innovation and development potential. Active touchpoints enable co-creation through direct interactions providing feedback, customer needs, ideas, and insights. Whereas passive digital touchpoints generate data on behavioral patterns, usage, retention, and churn that can be used to derive value-creation potential.

Bibliography

[1] Adams, R. (2021). An Ethical Approach to the Formulation of EU Energy Policy.

[2] Alam, I. (2006). Removing the fuzziness from the fuzzy front-end of service innovations through customer interactions. *Industrial Marketing Management, 35(4)*, 468–480. https://doi.org/10.1016/j.indmarman.2005.04.004

[3] Bell, E., Bryman, A., & Harley, B. (2022). Business research methods.

[4] Breidbach, C. F., & Maglio, P. P. (2016). Technology-enabled value co-creation: An empirical analysis of actors, resources, and practices. *Industrial Marketing Management, 56*, 73–85. https://doi.org/10.1016/j.indmarman.2016.03.011

[5] Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research, 14(3)*, 252–271. https://doi.org/10.1177/1094670511411703

[6] Chandler, J. D., & Vargo, S. L. (2011). Contextualization and value-in-context: How context frames exchange. *Marketing Theory, 11(1),* 35–49. https://doi.org/10.1177/1470593110393713

[7] Cossío-Silva, F.-J., Revilla-Camacho, M.-Á., Vega-Vázquez, M., & Palacios-Florencio, B. (2016). Value co-creation and customer loyalty. *Journal of Business Research, 69(5)*, 1621–1625. https://doi.org/10.1016/j.jbusres.2015.10.028

[8] Crittenden, A. B., Crittenden, V. L., & Crittenden, W. F. (2019). The digitalization triumvirate: How incumbents survive. *Business Horizons, 62(2),* 259–266. https://doi.org/10.1016/j.bushor.2018.11.005

[9] Dalla Pozza, I. (2022). The role of proximity in omnichannel customer experience. *Journal of Research in Interactive Marketing, 16(1)*, 1–18. https://www.emerald.com/insight/content/doi/10.1108/josm-01-2022-0009/full/html#sec002

[10] Diamant, I., Dolovac, A., Dalheim, M., & Nyberg, J. (2021). *Sweden's Electricity and Natural Gas Market*, 2021 (Ei R2022:07). Retrieved March 4, 2025, from

https://ei.se/download/18.31b721ca18388fe22ad2d3f/1664799315977/Sweden%27s-electricity-and-natural-gas-market-2021-Ei-R2022-07.pdf

[11] Díaz, M., Donázar, J. A., Dufour, J., & Pavone, V. (2021). Social and Environmental Aspects of the Energy Transition.

[12] *Digitalisation and data exchange are key enablers for a modern and resilient energy system.* (2024, December 2). Energy. https://energy.ec.europa.eu/news/digitalisation-and-data-exchange-are-key-enablers-modern-and-resilient-energy-system-2024-12-02_en

[13] Digitalisation of the energy systems. (n.d.). Energy. https://energy.ec.europa.eu/topics/eus-energy-system/digitalisation-energy-system_en

[14] Edvardsson, B., Gustafsson, A., Johnson, M. D., & Sandén, B. (2000). New service development and innovation in the new economy. Studentlitteratur AB.

[15] Energiföretagen (2025). https://www.energiforetagen.se/energifakta/elsystemet/produktion/

[16] Esgalhado, B., & Veillard, X. (2025, January 27). Improving B2B energy propositions: Four trends reshaping the industry. McKinsey & Company. https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/improving-b2b-energy-propositions-four-trends-reshaping-the-industry

[17] Favoretto, C., Mendes, G. H., Oliveira, M. G., Cauchick-Miguel, P. A., & Coreynen, W. (2022). From servitization to digital servitization: How digitalization transforms companies' transition towards services. *Industrial Marketing Management, 102,* 104–121. https://doi.org/10.1016/j.indmarman.2022.01.003

[18] Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy, 26(4–5)*, 537–556. https://doi.org/10.1016/S0048-7333(97)00030-9

[19] Gao, L., Melero-Polo, I., Ruz-Mendoza, M. Á., & Trifu, A. (2021). Exploring the role of service touchpoints on the path to financial, behavioral and relational customer outcomes: insights from a B2B service context. *Journal of Business and Industrial Marketing, 37(11)*, 2260–2277. https://doi.org/10.1108/jbim-02-2021-0100

[20] Gatrell, C., Muzio, D., Post, C., & Wickert, C. (2024). Here, there and everywhere: on the responsible use of artificial intelligence (AI) in management research and the Peer-Review process. *Journal of Management Studies, 61(3)*, 739–751. https://doi.org/10.1111/joms.13045

[21] Gioia, D. (2021). A systematic methodology for doing qualitative research. *The Journal of Applied Behavioral Science, 57(1)*, 20–29. https://doi.org/10.1177/0021886320982715

[22] Goldbach, K., Rotaru, A. M., Reichert, S., Stiff, G., & Gölz, S. (2018). Which digital energy services improve energy efficiency? A multi-criteria investigation with European experts. *Energy Policy, 115*, 239–248. https://doi.org/10.1016/j.enpol.2017.12.036

[23] Gradillas, M., & Thomas, L. D. W. (2023). Distinguishing digitization and digitalization: A systematic review and conceptual framework. *Journal of Product Innovation Management.* https://doi.org/10.1111/jpim.12690

[24] Gustafsson, A., Kristensson, P., & Witell, L. (2012). Customer co-creation in service innovation: A matter of communication? *Journal of Service Management, 23(3)*, 311–327.

[25] Göteborg Energi. (2025). Energirapporten. Retrieved March 10, 2025, from https://www.goteborgenergi.se/foretag/energitjanster/energirapporten

[26] Haas, R., Nakicenovic, N., Ajanovic, A., Faber, T., Kranzl, L., Müller, A., & Resch, G. (2008). Towards sustainability of energy systems: A primer on how to apply the concept of energy services to identify necessary trends and policies. *Energy Policy, 36(11)*, 4012–4021.

[27] Heinen, S., & Richards, P. (2020). Towards customer-centric energy utilities - A granular data-driven bottom-up approach to understanding energy customer trends. *The Electricity Journal, 33(9),* 106836. https://doi.org/10.1016/j.tej.2020.106836

[28] Heymann, F., Milojevic, T., Covatariu, A., & Verma, P. (2022). Digitalization in decarbonizing electricity systems – Phenomena, regional aspects, stakeholders, use cases, challenges and policy options. *Energy, 262,* 125521. https://doi.org/10.1016/j.energy.2022.125521

[29] Jaeger, R. G., & Halliday, T. R. (1998). On Confirmatory versus Exploratory Research. *Herpetologica, 54*, S64–S66. http://www.jstor.org/stable/3893289

[30] Kannan, P., & Li, H. (2017). Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing, 34(1)*, 22–45. https://doi.org/10.1016/j.ijresmar.2016.11.006

[31] Kerscher, S., & Arboleya, P. (2022). The key role of aggregators in the energy transition under the latest European regulatory framework. *International Journal of Electrical Power and Energy Systems, 134*, 107361.

https://doi.org/10.1016/j.ijepes.2021.107361

[32] Kindström, D., & Kowalkowski, C. (2014). Service innovation in product-centric firms: A multidimensional business model perspective. *Journal of Business & Industrial Marketing, 29(2)*, 96–111. https://doi.org/10.1108/JBIM-08-2013-0165

[33] Kindström, D., Ottosson, M., & Thollander, P. (2017). Driving forces for and barriers to providing energy services—a study of local and regional energy companies in Sweden. *Energy Efficiency, 10*, 21–39.

[34] Korstjens, I., & Moser, A. (2017). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice, 24(1)*, 120–124. https://doi.org/10.1080/13814788.2017.1375092

[35] Kowalkowski, C., Wirtz, J., & Ehret, M. (2024). Digital service innovation in B2B markets. *Journal of Service Management, 35(2)*, 280-305. https://doi.org/10.1108/josm-12-2022-0403

[36] Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2021). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466. https://doi.org/10.1016/j.ijinfomgt.2021.102466

[37] Krumm, A., Süsser, D., & Blechinger, P. (2022). Modelling social aspects of the energy transition: What is the current representation of social factors in energy models? *Energy, 239*, 121706.

[38] Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing, 80(6)*, 69–96. https://doi.org/10.1509/jm.15.0420

[39] Lundin, L., & Kindström, D. (2024). Managing digitalized touchpoints in B2B customer journeys. *Industrial Marketing Management, 121*, 88–99. https://doi.org/10.1016/j.indmarman.2024.07.004

[40] Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: Reactions, reflections and refinements. *Marketing Theory, 6(3)*, 281–288. https://doi.org/10.1177/1470593106066781

[41] Menor, L. J., Tatikonda, M. V., & Sampson, S. E. (2002). New service development: Areas for exploitation and exploration. *Journal of Operations Management, 20(2)*, 135–157. https://doi.org/10.1016/S0272-6963(01)00091-2

[42] Miles, M. B., Huberman, A. M., & Saldana, J. (2020). *Qualitative data analysis: A Methods Sourcebook.* SAGE Publications, Incorporated.

[43] Mora Cortez, R., Johnston, W. J., & Sheng, S. (2021). B2B market segmentation: A systematic review and research agenda. *Journal of Business Research, 133*, 207–223. https://doi.org/10.1016/j.jbusres.2021.04.057

[44] Payne, A.F., Storbacka, K. & Frow, P. Managing the co-creation of value. J. of the Acad. Mark. Sci. 36, 83–96 (2008). https://doi.org/10.1007/s11747-007-0070-0

[45] Poblete, L., & Halldorsson, A. (2023). Sourcing energy services in business-to-business contexts: Practices among end-customers. *Energy Efficiency, 16(3).*

[46] Ross, J. (2019). Chapter 1: Don't Confuse Digital with Digitization. In MIT Sloan Management Review (Eds.), *Who wins in a digital world?: Strategies to Make Your Organization Fit for the Future.* (pp. 1-3). MIT Press.

[47] Saarikko, T., Westergren, U. H., & Blomquist, T. (2020). Digital transformation: Five recommendations for the digitally conscious firm. *Business Horizons, 63(6)*, 825–839. https://doi.org/10.1016/j.bushor.2020.07.005

[48] Santos, A. F. D., & Saraiva, J. T. (2024). An Agent Based Model Applied to a Local Energy Market (LEM) Considering Demand Response (DR) and Its Interaction with the Wholesale Market (WSM). *2022 18th International Conference on the European Energy Market (EEM), 1–6.* https://doi.org/10.1109/eem60825.2024.10608884

[49] SCB (2025) *Tillförsel och användning av el 2001–2023 (GWh).* (n.d.). Statistikmyndigheten SCB. https://www.scb.se/hitta-statistik/statistik-efter-amne/energi/tillforsel-och-anvandning-av-energi/arlig-energistatistik-el-gas-och-fjarrvarme/pong/tabell-och-diagram/tillforsel-och-anvandning-av-el-20012023-gwh/

[50] Simmonds, H., Gazley, A., Kaartemo, V., Renton, M., & Hooper, V. (2021). Mechanisms of service ecosystem emergence: Exploring the case of public sector digital transformation. *Journal of Business Research, 137*, 100–115. https://doi.org/10.1016/j.jbusres.2021.08.008

[51] Storey, C., & Hull, F. M. (2010). Service development success: A contingent approach by form of service. *Journal of Service Management, 21(2)*, 140–161. https://doi.org/10.1108/09564231011039338

[52] Terho, H., Haas, A., Eggert, A., & Ulaga, W. (2012). "It's almost like taking the sales out of selling": Toward a conceptualization of value-based selling in business markets. *Industrial Marketing Management, 41(1)*, 174–185. https://doi.org/10.1016/j.indmarman.2011.11.011

[53] Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. *Journal of Service Research, 13(3)*, 253–266. https://doi.org/10.1177/1094670510375599

[54] Varela, I. (2017). Energy is essential, but utilities? Digitalization: What does it mean for the energy sector? In *Springer eBooks* (pp. 829–838). https://doi.org/10.1007/978-3-662-49275-8_73

[55] Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing, 68(1)*, 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

[56] Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science, 44(1)*, 5–23. https://doi.org/10.1007/s11747-015-0456-3

[57] Vattenfall. (2025). *Varför är elpriset så högt?* Vattenfall. https://www.vattenfall.se/fokus/tips-rad/varfor-ar-elpriset-sa-hogt/

[58] Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

[59] Wagner, S. M., Jönke, R., & Hadjiconstantinou, E. (2018). Relationship archetypes in aftermarkets. *International Journal of Production Research, 56(6)*, 2250–2268. https://doi.org/10.1080/00207543.2017.1378826

[60] Warner, K. S., & Wäger, M. (2018). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. https://doi.org/10.1016/j.lrp.2018.12.001

[61] Wynstra, F., Spring, M., & Schoenherr, T. (2014). Service triads: A research agenda for buyer–supplier–customer triads in business services. *Journal of Operations Management, 35(1)*, 1–20. https://doi.org/10.1016/j.jom.2014.10.002

A
Interview Guides

The following appendix includes the questions asked during all interviews that were held in the study. The interview guides were adjusted based on the nature of the interviewed actor, therefore one interview guide was used for energy providers, one for intermediaries, and one for customers. All interview guides included some key definitions that were sent out beforehand in order to align the respondent's understanding of the subject with ours as well as some background information on the thesis project.

Definitions

Digitalisering: Ett koncept som avser antagandet, tillämpningen och användningen av digitala verktyg för att fånga nya affärsmöjligheter som leder till socioekonomisk förändring. Dessa verktyg kan avse exempelvis smarta mätare, realtidsmätare, IoT, AI, Cloud Computing, Blockchain, etc.

Digitala Touchpoints: En kontaktpunkt där en användare eller kund interagerar med ett företag, en tjänst eller ett varumärke genom digitala kanaler. Dessa kanaler kan avse hemsidor, appar, digitala plattformar, realtidsöverföring av data mm.

Digitala Energitjänster: En tjänst som använder digital teknik för att optimera energianvändning, förbättra energieffektivitet eller möjliggöra smart energistyrning. Alltså ett skapande av värde mot kund som inte avser den faktiska leveransen av energi.

A.1 Energy Providers

Personlig Bakgrund

- Berätta kortfattat om dig själv och din roll på företaget.

Era nuvarande digitala tjänster

- Hur ser ert utbud av digitala tjänster ut idag?
- Hur har digitaliseringen förändrat er process för att utveckla digitala energitjänster mot B2B kunder?

Kundens Roll

- Om vi tittar på er process för att utveckla tjänster, hur skulle du säga att digitaliseringen har påverkat er möjlighet att inkludera kundens perspektiv?
- Få med perspektivet av datamängd på kunbeteende
- I vilken del av utvecklingsprocessen är kunden delaktig?
- Hur har digitaliseringen förändrat kundernas förväntningar på era tjänster?
- Få med att kunder har högra förväntningar iom större framsteg i andra sektorer.

Digitala Touchpoints

- Vilka digitala touchpoints/kontaktpunkter har ni mot era B2B kunder, och vilka används mest för att förstå kundbehov?
- Hur använder ni digitala touchpoints/kontaktpunkter i ert arbete med att anpassa och förbättra era digitala tjänster?
- Hur använder ni digitala touchpoints/kontaktpunkter för att skapa kundinsikter?

Marknaden

- Hur påverkar introduktionen av tredjepartsaktörer era kundrelationer och er utveckling av tjänster? (t.ex. Aggregatorer och agenter/leverantörer)

Framtidsspaning

- Hur tror du att digitala energitjänster påverkar kundengagemang och kundförtroende?
- Vilka risker kring digitaliseringen ser du som mest kritiska för energibolag de kommande 5–10 åren?

Andra aktörer

- Finns det några företag som ligger före med digitala erbjudanden gentemot kund?
- Finns det andra branscher som du ser som en förebild/inspiration när det kommer till digitalisering och kundfokus?
- Har ni förslag på tredjepartsleverantörer vi bör kontakta? Aggregatorer, agenter etc.?
- Har ni förslag på kunder vi bör kontakta

A.2 Customers

Personlig bakgrund

- Berätta kortfattat om dig själv och din roll på företaget.

Nuvarande digitala tjänster

- Vilka digitala energitjänster använder ni idag i er verksamhet?
- Hur upplever du att digitala tjänster förändrar er relation med energileverantörer?
- Hur har digitaliseringen påverkat era interna processer kopplade till energianvändning?

Digitalisering och tjänsteutveckling

- På vilket sätt har digitaliseringen påverkat hur ni förväntar er att nya digitala energitjänster utvecklas och levereras?
- Upplever du att digitaliseringen har gjort det enklare eller svårare att inkludera era behov och önskemål i utvecklingen av nya tjänster?

Datadrivet kundperspektiv

- Hur använder ni idag data från digitala tjänster för att förstå ert eget energibeteende?
- Skulle ni vilja bli mer involverade i utvecklingsprocessen baserat på era användningsdata?

Förändrade kundförväntningar

- Hur tycker du att digitaliseringen generellt har påverkat era förväntningar på er energileverantör?
- Upplever ni ökade förväntningar på energibolagen baserat på digitala framsteg inom andra branscher? Kan du ge exempel på sådana branscher?

Digitala touchpoints/kontaktpunkter

- Vilka digitala kontaktpunkter med era energibolag använder ni mest idag (exempelvis portal, app, webbsidor)?
- Vilka av dessa är viktigast för att ni ska känna er hörda och sedda som kund?
- Hur kan energibolag bättre använda digitala kontaktpunkter för att anpassa deras tjänster efter era behov?

Marknadens utveckling och tredjepartsaktörer

- Hur påverkas er relation med er energileverantör av framväxten av tredjepartsaktörer, exempelvis aggregatorer eller agenter?
- Ser du någon risk eller möjlighet med ökad närvaro av tredjepartsaktörer?

Framtidsspaning

- Hur tror du att framtidens digitala energitjänster kan förbättra ert kundengagemang och förtroende för er energileverantör?

Förslag på andra aktörer

- Finns det andra energiföretag ni tycker är särskilt framgångsrika inom digitalisering gentemot kunder som vi bör studera?
- Finns det företag i andra branscher som inspirerar er vad gäller digitalisering och kundfokus?

Rekommendationer – tredje part och kunder

- Kan du rekommendera några tredjepartsleverantörer (aggregatorer, agenter etc.) som ni har god erfarenhet av?

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