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Research paper

How B2B suppliers articulate customer value propositions in the circular economy: Four innovation-driven value creation logics

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ABSTRACT

The transition toward the sustainability-driven circular economy is emerging across global markets. The circular economy refers to a regenerative and restorative economic system that aims to optimize resource usage and reduce waste, and offers potential to innovate novel value creation opportunities in B2B markets. However, how the value creation opportunities in circular economy are captured in supplier firms' customer value propositions (CVPs) remains underexplored. To address this critical gap, we develop a theoretical framework that illustrates the architecture of CVPs, and use it to conduct an extensive multiple-case study across several industries, offering types, and firm sizes, analyzing 74 documented CVPs in the Finnish circular economy. The results reveal that CVPs in the circular economy embody four alternative value creation logics (resurrect, share, optimize, and replace value) that are built on different forms of innovations, and highlight different design elements. This study advances current marketing theory by illustrating how suppliers articulate CVPs in the circular economy, and highlighting the key differences to prevailing insights from linear economy. For managers, this study offers important insights into designing CVPs that resonate with circular economy–oriented customers and broader stakeholders.

1. Introduction

As a prominent approach to improving sustainability in B2B markets, the circular economy has emerged as an alternative to the linear economy with evident interest across some of the world's largest market systems, including China (Mathews & Tan, 2011), the Europe Union (McDowall et al., 2017), and the United States (Esposito, Tse, & Soufani, 2018). In addition, the approach has gained momentum across several academic disciplines (Bocken, de Pauw, Bakker, & van der Grinten, 2016; Spring & Araujo, 2017). A key reason for its widespread popularity is that the circular economy encapsulates many sustainability trends, including carbon neutrality (Türkeli, Kemp, Huang, Bleischwitz, & McDowall, 2018), resource efficiency (Ghisellini, Cialani, & Ulgiati, 2016), and industrial ecology (Zaoual & Lecocq, 2018), functioning as an overall framework for the global transition to sustainability (Hopkinson, Zils, Hawkins, & Roper, 2018).

In general, the circular economy refers to a closed-loop, restorative, and regenerative economic system, which aims to optimize resource and waste use by "slowing, closing, and narrowing material and energy loops" (Bocken et al., 2016).The key goal of the circular economy is to innovate ways to "keep products, components and materials at their highest utility and value, at all times" (Webster, 2015, p. 16), while creating long-lasting economic, environmental, and social outcomes for the broader social system (Ghisellini et al., 2016). Thus, the circular economy is essentially built on innovations that promise to generate "more value, and for a longer period" for firms and society than the traditional linear economy does (Urbinati, Chiaroni, & Chiesa, 2017, p. 487). However, despite the increased value potential that the circular economy holds, we know very little about how B2B firms in this economy articulate the novel value creation opportunities that their innovations deliver to customers and broader stakeholders (Boons & Lüdeke-Freund, 2013; Manninen et al., 2018).

Customer value propositions (CVPs) are considered as supplier firms' most important *strategic tools* for articulating how the firms create value to and with their customers and stakeholders (Eggert, Ulaga, Frow, & Payne, 2018; Payne, Frow, & Eggert, 2017). However, although CVPs have a rich and long history (see e.g. Ballantyne, Frow, Varey, & Payne, 2011), most of this is based on the linear economy, where CVPs are built on distinct product-service offerings, and tend to highlight unique product features and monetary benefits for direct customers

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(Anderson, Narus, & van Rossum, 2006; Wouters & Kirchberger, 2015). In contrast, in the circular economy, CVPs are usually built on novel innovations that promise multiple benefits to broader societal stakeholders (D'Antone, Canning, Franklin-Johnson, & Spencer, 2017; Porter & Kramer, 2011). However, current literature provides only a few insights into how to design such "blended" or "sustainable" CVPs (Emerson, 2003; Manninen et al., 2018; Patala et al., 2016). Thus, understanding of how to design CVPs in the circular economy, and what kind of superior value they promise to the target beneficiaries, is missing. This is a critical issue for firms that are transitioning to the circular economy. To drive the adoption of their innovative offerings in the circular economy, firms need a deep understanding and practical tools to develop CVPs that demonstrate how their offerings create more value compared to competing, but less sustainable alternatives in the linear economy (Esposito et al., 2018; Ramirez, Gonzalez, & Moreira, 2014).

CVPs are usually developed using different design elements (Payne et al., 2017), which together articulate broadly what, how, and for whom value is created. However, in this study, we argue, and subsequently demonstrate, that extant CVP literature has considered different design elements primarily in the linear economy context, but that there is a growing need to understand how CVP design elements are used in the circular economy context (c.f. Bohnsack & Pinkse, 2017; Manninen et al., 2018). From a broader perspective, different configurations of design elements constitute the overall structure, or "architecture," of CVPs, which crystallizes a firm's underlying value creation logic and the superior value package the firm delivers to target customers (Payne et al., 2017, p. 472). Although a few previous studies have unpacked the architecture of highly innovative CVPs (e.g., Payne & Frow, 2014a), they have focused on single-case studies in the linear economy. Thus, more generalizable insights into CVP design elements and their overarching architectures are needed both theoretically and managerially.

Against this background, the purpose of this study is to explore *how B2B suppliers use CVPs to articulate value in the circular economy*. We address this purpose in two ways: First, we identify *how suppliers' CVPs can be deconstructed based on their architecture.* By architecture we refer to the configuration of the key design elements that CVPs consist of (Payne et al., 2017). This gives us a theoretically rigorous and managerially applicable structure for analyzing CVPs in detail. Second, we identify *how different CVP architectures convey value.* This allows us to identify different design element configurations, reveal their key characteristics, and ultimately, provide granular insights into how different firms use CVPs to convey value from innovations in the circular economy (c.f. Payne & Frow, 2014b).

To address the research questions, we integrate theoretical insights from CVP, sustainability, and innovation literatures into the architecture and requirements of CVPs in the circular economy. Then, we conduct an extensive multiple-case study (Eisenhardt & Graebner, 2007), and analyze 74 documented and publicly available descriptions of circular economy-driven supplier firm CVPs across multiple industries, offering types, and firm sizes, to provide rich and nuanced empirical insights into CVPs and their use in the circular economy.

As a result, we first deconstruct the architecture of CVPs and, subsequently, reveal four alternative value creation logics (resurrect, share, optimize, and replace value) that are built on different forms of innovations, and characterize typical CVPs in the circular economy. We then describe the key CVP design elements that each value creation logic embodies, and discuss the implications of each logic. Taken together, the findings from this study contribute to several priority areas in the current CVP literature by i) developing a theoretical framework that illustrates the architecture of CVPs (Payne et al., 2017), ii) deconstructing CVPs in multiple industries to provide a "more comprehensive and transparent understanding of the differentiating …elements" that CVPs embody in different contexts (Payne & Frow, 2014a, p. 238), and iii) demonstrating how firms can use CVPs to articulate value from novel innovations in the circular economy (Boons & Lüdeke-Freund, 2013). Collectively, the findings from this study expand current CVP theory (Chandler & Lusch, 2015; Eggert et al., 2018; Payne et al., 2017) toward a pluralistic, societal, and systemic view of CVPs that is increasingly needed in the contemporary and sustainability-driven business environment (Kotler, 2011; Porter & Kramer, 2011; Varadarajan, 2017). For managers, this study offers important insights into designing CVPs that resonate with customers and broader stakeholders in the circular economy.

The paper is organized as follows. In the next section, we discuss the current understanding of CVPs and their architecture, as well as the role of innovations in the circular economy. Then, we present the research design and the empirical findings. Finally, we discuss implications for CVP, industrial marketing, and circular economy literature and management practice, and suggest potential avenues for future research.

2. Theoretical background

2.1. Customer value propositions as strategic tools

CVPs have a central position in the marketing literature as a supplier firm's primary strategic tools for articulating the value they aim to deliver to their customers and broader stakeholders (Ballantyne et al., 2011; Payne & Frow, 2014b). In addition to customer-targeted messages, CVPs can function also as important guidelines for a firm´s internal strategy (Payne et al., 2017), or as market shaping devices that can steer service systems towards a position that makes the firm's CVP even more differentiated or distinguished (Nenonen, Storbacka, & Windahl, 2019).

Fundamentally, CVPs reflect the supplier´s *strategic value creation logic* (Payne et al., 2017) and play a critical role in the supplier's business model (Ehret, Kashyap, & Wirtz, 2013). Thus, CVPs have been commonly defined as supplier-initiated statements or promises of the potential benefits that a particular product or service will deliver to customers (Anderson et al., 2006; Rintamäki, Kuusela, & Mitronen, 2007).

Much of the previous CVP literature has been built around the idea that quantified benefits and their monetary worth to relevant, often firm-level stakeholders are at the heart of resonating CVPs, particularly in B2B markets (Hinterhuber, 2017; Terho, Haas, Eggert, & Ulaga, 2012; Wouters & Kirchberger, 2015). Yet, as the contemporary market space has become increasingly networked, where exchanges are enacted, experienced, and evaluated by diverse and multiple actors (Eggert et al., 2018), several studies have noted the need to understand and articulate CVPs more broadly (Chandler & Lusch, 2015; Frow et al., 2014; Storbacka & Nenonen, 2011). This includes understanding a broader set of value drivers beyond those that are economic or monetary (Corvellec & Hultman, 2014; Patala et al., 2016), targeting a wider set of stakeholders than (business) customers alone (Ballantyne et al., 2011; Frow & Payne, 2011), and developing CVPs that are not restricted to supplier inputs only (Frow et al., 2014; Kowalkowski, Persson Ridell, Röndell, & Sörhammar, 2012). Taken together, instead of passive, supplier-initiated, and relatively fixed offerings of value for customers, emerging research considers CVPs increasingly as active, mutually-crafted, and open proposals for service systems to take part in value co-creation (Chandler & Lusch, 2015; Eggert et al., 2018). For example, Storbacka and Nenonen (2011) point out that CVPs can function as tools to "script" markets, too, and allow firms to go beyond focusing on existing customer needs that the firm can competitively fulfill, to shaping broader markets that give firms even better competitive advantage with multiple customers or service systems.

Given the increased complexity of CVPs in contemporary markets, recent studies have emphasized the need to dissect (Bohnsack & Pinkse, 2017), disentangle (Hinterhuber, 2017), or deconstruct (Payne & Frow, 2014a) CVPs into specific elements that would provide a more comprehensive and transparent understanding of the different CVP elements and their configurations that promise superior value to

customers. In this study, we refer to the suite of different CVP elements as an overall CVP architecture, and assume that individual CVPs (can) feature different element configurations. We distinguish CVP architecture from the CVP anatomy (Skålén, Gummerus, von Koskull, & Magnusson, 2015), where the latter is focused on the supplier´s key practices (routinized activities) that enable the creation of CVPs, while the former is focused on the key elements that suppliers intentionally articulate to stakeholders.

2.2. The architecture of customer value propositions

The architecture of CVPs can be understood as a configuration of CVP design elements that "determine how CVPs affect both the supplier firm and its customers" (Payne et al., 2017, p. 478). Current CVP literature highlights six key design elements that have differential effects on CVPs, namely, benefits, recipients, perspective, focus, explicitness, and granularity (Payne et al., 2017).

First, a *benefits* element is usually at the heart of CVPs; it articulates the type of value outcomes (i.e., economic, functional, environmental, social, symbolic) that target customers can expect to receive (Rintamäki et al., 2007). Especially in business markets, marketing messages that highlight economic and functional benefits are usually considered most convincing (Anderson et al., 2006; Wouters & Kirchberger, 2015). Second, a *recipients* element articulates the relevant stakeholder groups that can expect to benefit from the CVP (Frow & Payne, 2011). While CVPs can be addressed to wider stakeholder groups and service ecosystem actors, such as employees, customers, suppliers, partners, shareholders, and society (Chandler & Lusch, 2015; Frow et al., 2014), in practice, most CVPs target business decision makers in buyer-supplier dyads (Kowalkowski, Kindström, & Carlborg, 2016). Third, a *perspective* element articulates whether the CVP is primarily a unidirectional and supplier-determined promise of value, or a reciprocal and mutually determined proposal of value (Payne et al., 2017). While this highlights the relevant stakeholders' expected roles and activities in terms of value delivery and co-creation (Ballantyne et al., 2011), in practice, most CVPs are supplier-initiated promises of value delivery, where customers are treated primarily as passive recipients rather than active co-creators of mutually initiated proposals (Kowalkowski et al., 2012).

Fourth, a *focus*[1] element articulates whether the CVP promises value-in-exchange, value-in-experience, or value-in-use (Payne et al., 2017). Essentially, value-in-exchange focus promises to deliver value as more efficient product/service offerings, value-in-experience as enhanced total customer experiences, and value-in-use as realized customer goals in broader ecosystems (Eggert et al., 2018). In practice, though, many CVPs still emphasize superior product features and value-in-exchange perspective. Fifth, an *explicitness* element indicates how explicitly or implicitly organizations articulate their value propositions to internal and external audiences (Payne et al., 2017). This is determined by whether CVPs are objectively quantified, calculated, and articulated (Hinterhuber, 2017; Wouters & Kirchberger, 2015) or more subjectively demonstrated, depicted, and described (Keränen, 2017). Currently, most CVPs tend to demonstrate unique, yet unquantified, offering features (Anderson et al., 2006; Bohnsack & Pinkse, 2017; Heikka & Nätti, 2018). Finally, a *granularity* element articulates whether the CVP is formulated at the firm, customer segment, or individual customer level (Payne et al., 2017). Each level has its own implications in terms of other elements, and as the granularity increases, organizations need increasing amounts of customer insight and input to design resonating CVPs (Eggert et al., 2018). While organizations can employ CVPs at multiple levels, most of them tend to prioritize one at a time, usually at the firm level (Payne & Frow, 2014b). Key design elements that form the overarching architecture of CVP are summarized in Table 1, with illustrative examples from current managerial practice and relevant literature.

While a few recent studies (Bohnsack & Pinkse, 2017; Manninen et al., 2018; Patala et al., 2016) have considered how CVPs should be adapted to the circular economy context, they focus almost exclusively on different ways to convey the benefits element, but leave other CVP design elements unexplored. Therefore, current literature provides limited insights on how to adapt the whole architecture of CVPs to the circular economy.

2.3. Innovations as enablers of value creation in circular economy

The circular economy is an innovation-driven phenomenon, and largely driven by the ongoing sustainability transition that influences virtually all actors across different industries and economies (Esposito et al., 2018; Geissdoerfer, Savaget, Bocken, & Hultink, 2017; Spring & Araujo, 2017). Under the sustainability imperative, supplier firms are increasingly encouraged to innovate environmentally friendly products and services (Katsikeas, Leonidou, & Zeriti, 2016; Pujari, Wright, & Peattle, 2003), while consumers, business buyers, and wider societal actors are increasingly paying attention to environmental, ecological, and social purchasing criteria (D'Antone et al., 2017; Kotler, 2011). However, there is a growing evidence that innovating environmentally friendly and sustainable offerings alone is not sufficient condition to differentiate them from traditional alternatives (e.g., Müller, 2012; Olson, 2013; Ramirez et al., 2014; Rokka & Uusitalo, 2008). Instead, to make to sustainable offerings more competitive, and facilitate their adoption in wider value chains and social systems, suppliers should be able to communicate how the sustainable innovations create and deliver value to their customers and relevant stakeholders (Kapitan, Kennedy, & Berth, 2019; Patala et al., 2016).

In the circular economy, sustainability is usually introduced to the markets through different innovations (Prieto-Sandoval, Jaca, & Ormazabal, 2018) that aim to create value fundamentally by improving systemic resource efficiency and circulation of materials (Ghisellini et al., 2016). This can occur through three different mechanisms: Closing resource loops by recycling or reusing discarded materials and/or waste back to the circulation, narrowing resource flows by reducing the amount of resourced needed for a given operation, and slowing resource flows by extending the lifecycle or usage period of specific resources (Bocken et al., 2016).

In the innovation literature, innovations are usually discussed either in terms of processes (how innovation happens), outcomes (what is innovated) (Crossan & Apaydin, 2010), or whether the innovation is focused on resources or practices (Skålén et al., 2015). Usually this is conceptualized in terms of different innovation forms, which typically include product, service, process, and business model innovations (Crossan & Apaydin, 2010). Similar categorization is common in the circular economy literature (Bocken et al., 2016; Prieto-Sandoval et al., 2018), and Table 2 displays how different innovations forms enable value creation t in the circular economy. Current literature indicates that different forms of innovations are necessary to take advantage of the mechanisms of improving systemic resource efficiency, i.e. closing, slowing, and narrowing resource loops (Bocken et al., 2016; Prieto-Sandoval et al., 2018).

Previous B2B marketing literature has emphasized the role of innovations as a key to successful adoption of sustainable and circular economy–oriented business strategies in industrial markets (Spring & Araujo, 2017). For example, Mariadoss, Tansuhaj, and Mouri (2011) show that innovation-based strategies and marketing capabilities are imperative for achieving competitive advantage from environmental sustainability, and Gusmerotti, Testa, Corsini, Pretner, and Iraldo (2019) argue that innovations are key drivers for B2B firms to increase circularity in their businesses. However, despite the central role of innovations as enablers of the circular

[1] In Payne et al. (2017), the *focus* element refers the number and breadth of superior benefits, while the *perspective* elements refers to both the stakeholder roles (supplier-determined, transitional, or reciprocal) as well as the nature of the value promised (value-in-exchange, value-in-experience, or value-in-use). To provide a more granular understanding of the CVP architecture, and clarify the boundaries between different elements, we capture the number and breadth of superior benefits under the *benefits* element (c.f., Anderson et al., 2006), the stakeholder roles under the *perspective* element (Payne et al., 2017), and the nature of the value promised under the *focus* element.

Table 1
Design elements underlying the architecture of a CVP (adapted and expanded from Payne et al. (2017).

CVP design elements	In terms of CVP design, answers to the question:	Exemplified in current CVP literature usually as	Supportive literature
Underlying elements			
Firm´s value creation logic	What is the fundamental value creation logic that the architecture of CVP reflects	Differentiation advantage or cost savings	Lehmann and Winer (1991); Kaplan and Norton (2001)
Core offering	On what resources or capabilities is the CVP built on	Product/service offerings	Anderson et al. (2006)
Key design elements			
Benefits	What kind of benefits CVP emphasizes	Economic benefits, monetary value	Anderson et al. (2006); Rintamäki et al. (2007)
Recipients	To whom the CVP is targeted	Business customers or key decision makers in buyer-supplier dyads	Frow and Payne (2011); Frow et al. (2014)
Perspective	Whether the CVP is a unidirectional and supplier-determined promise of value, or a reciprocal and mutually determined proposal of value	Usually supplier-initiated statements, customers treated mostly as passive recipients	Ballantyne et al. (2011); Kowalkowski et al. (2016); Payne et al. (2017)
Focus	Whether the CVP emphasizes value-in-exchange, value-in-experience, or value-in-use	Superior product features or value embedded in offerings (value-in-exchange)	Ballantyne et al. (2011); Kowalkowski et al. (2012)
Explicitness	How explicitly or implicitly organizations articulate their value propositions to internal and external audiences	Unique, yet unquantified, offering features	Wouters and Kirchberger (2015); Payne et al. (2017); Sakyi-Gyinae and Holmlund (2018)
Granularity	Whether the CVP is formulated at the firm, customer segment, or individual customer level	Emphasis on non-specific firm-level CVPs	Payne and Frow (2014a); Patala et al. (2016)

Table 2
Different innovation forms and how they enable value creation in the circular economy.

Innovation form	As discussed in the innovation literature	As exemplified in the circular economy literature
Product	Products that are perceived as meaningfully new, novel, original, or unique. (Henard & Szymanski, 2001; Wang & Ahmed, 2004)	More durable products, products that are refurbished or recycled, or products that significantly reduce use of materials (Bocken et al., 2016)
Process	"Introduction of new production methods, new management approaches, and new technology that can be used to improve production and management processes." (Wang & Ahmed, 2004, p. 304)	Processes that prevent the generation of waste by facilitating value in products to be maintained or increased. For example, recycling (Ghisellini et al., 2016), remanufacturing (Lieder & Rashid, 2016), and product take-back processes (Lewandowski, 2016)
Service	"New services have been introduced to the market, or existing services have been significantly improved or important changes have been made to their basic characteristics, intangible components, or desired purposes." (Santamaría, Jésus Nieto, & Miles, 2012, pp. 148–149)	Services allow products and materials to maintain their value for longer, or increase the value creation potential of a single product. For example, maintenance services or sharing services (Spring & Araujo, 2017; Tukker, 2015)
Business model	"Business-model innovation occurs when a firm adopts a novel approach to commercializing its underlying assets" (Gambardella & McGahan, 2010, p. 263)	New ways for firms to offer and capture value from reduced sales of new products and materials, for example, pricing products as services with payments through monthly fees. (Goyal, Esposito, & Kapoor, 2018; Ranta, Aarikka-Stenroos, & Mäkinen, 2018).

economy, only a few studies have examined how B2B suppliers can leverage different forms of innovations in CVPs (Lindič & da Silva, 2011; Skålén et al., 2015).

3. Methodology

3.1. Research design

To provide much needed research on the use of CVPs in sustainability and the circular economy (Boons & Lüdeke-Freund, 2013; Manninen et al., 2018; Patala et al., 2016), we employed an exploratory and qualitative multiple case research approach with the aim of building theory from empirical insights (Eisenhardt & Graebner, 2007). An exploratory approach is particularly suitable for identifying emerging topics (Corbin & Strauss, 2014), and a qualitative strategy allows us to elicit holistic insights on complex and multi-layered issues (Yin, 2018), such as the design and architecture of CVPs in the circular economy.

Given the scant number of previous studies that deconstructed CVPs (Payne & Frow, 2014a), and that most empirical CVP studies are limited to single-case designs in specific industries or applications (e.g. Corvellec & Hultman, 2014; Kowalkowski et al., 2012; Payne & Frow, 2014b), there is a need for more comprehensive analyses that take into account multiple industries and offering types. Hence, to address this need, we adopted a multiple case study design to develop holistic insights from an extensive analysis of a wide range of CVPs across multiple industries, offering types, and firm sizes to facilitate rich and robust theory development and improve generalizability of the findings (Eisenhardt & Graebner, 2007; Yin, 2018)

3.2. Data collection

To facilitate theory development, we used purposive and maximum variation sampling logics (Patton, 2015) to identify and select cases that would be particularly revelatory and information-rich in terms of CVPs in the circular economy. Hence, we focused on the documented and publicly available case compilation by the Finnish Independence Fund (SITRA), a national and well-recognized independent expert organization focused on creating and driving awareness about the circular economy in Finland. SITRA´s circular economy case repository includes altogether 102 documented descriptions[2] of CVPs of exemplary, highly

[2] The cases collected and compiled by SITRA are based on interviews with the case firms, and emphasize the case firm´s business model, and how their offering creates value to customers, other stakeholders, and the firm itself. In other words, the cases describe the understanding that the firms have about the value creation potential of their own offering, and their intended CVP and its targeted customer or stakeholder segments.

innovative, frontrunner supplier firms that articulate broadly the innovation underlying the CVP, as well as its value creation potential to various stakeholders. Given our focus on a B2B context, we limited our empirical analysis to 74 CVP descriptions from this group that involved B2B offerings and were developed by a wide variety of Finnish B2B suppliers operating in a wide range of industries (e.g., energy, textile, food, construction) in global markets. The documented CVPs were accessed in April 2018 and saved in a database for further analysis. The total length of analyzed material was 148 pages of single-paged text. An overview of the 74 cases is provided in Appendix A.

Overall, such an extensive and diverse dataset involves CVPs built on different innovations and promise various value outcomes to a diverse set of stakeholders, providing a rich and versatile empirical base for exploratory and deconstructive analysis. As extant research on CVPs rely on interview- and observation-based studies of a small number of cases (Patala et al., 2016; Skålén et al., 2015), our approach of analyzing a large breadth of cases based on documented data extends the methodological approaches used in CVP literature. Furthermore, relying exclusively on publicly available and document-based data improves the transparency, validity, and replicability of the study (Yin, 2018).

3.3. Data analysis

Our data analysis focused on understanding the architecture and innovation forms that were behind the supplier-formulated CVPs in the circular economy. In the first stage, we employed within-case analysis (Eisenhardt & Graebner, 2007) and theoretical coding (Saldaña, 2015) to identify CVP design elements (see Table 1) and different innovation forms in each documented CVP. During this stage, the first author coded initially 30 cases, after which the emerging codes were jointly discussed, and a final, revised coding protocol was agreed upon and devised. After this, the first author recoded all 74 cases, with frequent member checks from the other authors. Due to the large volume of empirical data, we used ATLAS.ti software and Excel spreadsheets to facilitate data analysis, subsequent data categorization, and constant comparison, and ultimately, development of emerging theory from the empirical data (Bazeley & Jackson, 2013).

In the second stage, we employed cross-case analysis (Corbin & Strauss, 2014) to compare the characteristics of the identified design elements from each analyzed CVP, and identify emerging categories of CVPs that shared similar properties. During this process, we simultaneously contrasted the emerging and evolving categories with insights from CVP and circular economy literatures (e.g. Bocken et al., 2016; Payne et al., 2017). This iterative and abductive analytical strategy allowed us to revise and refine emerging empirical and data-driven observations with theory-driven insights, and ultimately, develop a theory that would better match the observed reality (Dubois & Gadde, 2014). For example, during this stage, it became apparent that rather than being characterized by single underlying innovations, CVPs in the circular economy tend to be characterized by alternative value creation logics (resurrect, share, optimize, or replace value), which share similar properties and features in terms of underlying innovation and emphasized CVP design elements. About 80% of the CVPs were characterized relatively distinctly by one primary value creation logic, while about 20% featured elements from two, or sometimes three logics. In cases where CVPs reflected multiple logics, usually one logic was still dominant, and we categorized such CVPs according to the dominant logic, after reaching a mutual conclusion among the authors. In terms of findings, this means that the underlying value creation logics that characterize CVPs in the circular economy are relatively distinct, but not mutually exclusive, and it is possible for a CVP to reflect multiple value creation logics, although in most cases, one logic is clearly dominant an thus most visible in terms of design elements.

In the third stage, we used focused coding (Saldaña, 2015) to identify the CVP design elements and specific innovation forms that were typical to identified value creation logics and to ensure that we had reached data saturation (Corbin & Strauss, 2014). Table 4 in the end of the next section summarizes the results of our analytical process.

To improve the quality and trustworthiness of the findings, we employed several well-established protocols for qualitative research (e.g. Beverland & Lindgreen, 2010; Lincoln & Guba, 1986). First, we improved generalizability and transferability of the findings by analyzing an extensive set of CVPs across multiple industries, offering types, and firm sizes (see Appendix A). Second, we improved reliability and replicability of the findings by carefully describing our analytical process and framework, and by employing publicly available and documented data. Finally, we improved credibility and internal validity of the study by employing researcher- and theory-based triangulation (Flick, 2004).

4. Findings

To explore how B2B suppliers articulate value in the circular economy, we deconstructed the architecture (i.e., the configuration of the design elements) of their documented CVPs, and used cross-case analysis to identify and group similar design elements into emerging categories. As our analysis progressed, it became evident that the architectures of CVPs in the circular economy reflected four relatively distinct and fundamentally different value creation logics: resurrect, share, optimize, and replace value, which are displayed visually in Table 3.

In the following section, we discuss the value creation logics and their characteristic CVP design elements in detail, and provide illustrative examples from empirical data. Table 4 at the end of this section provides a summary of the results.

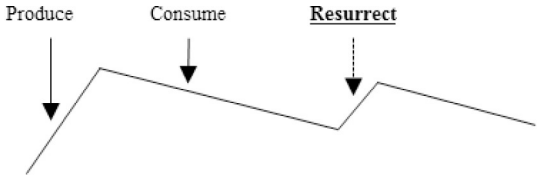
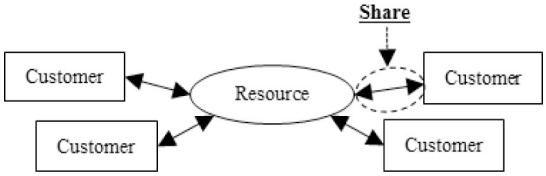
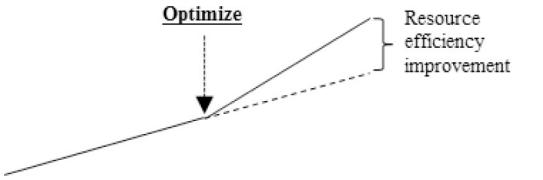
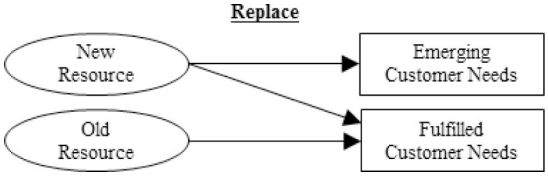
4.1. Resurrect value

The CVPs that emphasized *resurrect value* –logic (hereafter RV-CVPs) were built primarily on product and process innovations that enabled firms to restore used or disposed products and materials through recycling and/or refurbishment and return them to the market For example, by utilizing a novel process for separating plastic from household waste, Fortum (case 22, Appendix A) is able to sell recycled plastics, and by combining used materials, Pa-Ri Materia (case 46) is able to refurbish large volumes of used furniture for reuse. CVPs primarily emphasizing the resurrect value –logic were the most frequent in the dataset, representing 36 out of 74 cases.

RV-CVPs typically emphasize economic and environmental benefits to direct customers and their supply chain partners, especially in terms of lower purchasing prices with equal functionality and reduced/optimized resource usage. The key message that RV-CVPs articulate is that recycled or refurbished offerings are less expensive, yet of sufficient and/or equal quality compared to brand new products, thus alleviating and mitigating the potential low-quality stigma of used, restored, and/or non-new products. For example, Fortum´s (case 22) CVP highlights how recycling waste not only reduces waste management and incineration fees, but is also better for the environment, and Valtra´s (case 69) CVP emphasizes how remanufactured tractor gearboxes are given the same warranties as new products.

RV-CVPs are usually supplier-determined and unidirectional, highlighting novel innovations that the supplier can use to change how and what value is produced to its stakeholders. The customers' role, in turn, remains relatively passive and/or unchanged, as their buying and usage processes remain unaffected by the new CVP. In terms of focus, RV-CVPs tend to highlight equal product features and enhanced customer experiences during usage situations. For example, TouchPoint (case 65) highlights that during usage, the work clothing they produce from recycled materials can help build environmental friendliness into customers' brand image, and after usage, the same clothing can be further recycled into a new set clothing, generating savings in material costs.

Table 3
Core principles of the value creation logics.

Value creation logic	Defining characteristics	Core principle visualized
Resurrect value	Resurrecting the diminished value of resources and returning them to the market	
Share value	Sharing the value of a single resource among multiple customers	
Optimize value	Optimizing the value of a resource for a single customer	
Replace value	Replacing traditional resources with new, higher-value resources	

In terms of explicitness, RV-CVPs featured typically both weak and abstract value quantification: weak in the sense that while they did not calculate or estimate concrete cost savings, they made direct comparisons to alternative offerings in terms of price and functionality; abstract in the sense that they do not measure objective environmental impacts, such as CO2 omissions, but expressed that their offerings helped customers to "boost their green credentials" (CrisolteQ – case 8) and acquire a "sustainable, high-quality solution" that "helps to conserve natural aggregate products" (Destaclean – case 10). RV-CVPs are usually formulated at a customer segment level, addressing industry sectors where the supplier´s customers operate as incumbents, such as agriculture industry for Tracegrow (case 66), and waste management and energy industries for Watrec (case 70).

4.2. Share value

The CVPs that emphasized *share value* –logic (hereafter SV-CVPs) were built primarily on service and process innovations that enabled firms to improve distribution of or access to underutilized assets and resources, such as vehicles, industrial equipment and machinery, and surplus materials, to a broader customer and user base, thereby enhancing efficiency and utility of the existing resource base. The use of digitally enabled innovations was a typical feature of SV-CVPs, as each case in this category included a digital interface that facilitated access to shared resources. For example, by developing a new platform-as-a-service model, Sharetribe (case 54) is able to increase the number of marketplaces for second-hand products, and by offering a platform where customers can track and lease their resources to other firms, eRENT (case 18) increases the return on investment for its customers. CVPs primarily emphasizing the share value –logic were the least frequent in the dataset, representing 9 out of 74 cases.

SV-CVPs typically emphasize economic and functional benefits that are targeted primarily to direct customers and end users, especially in terms of lower upfront costs, easier usage, and increased utility. The key message that SV-CVPs articulate is that customers can enhance utility and usability of and accessibility to specific resources by sharing those resources. For example, Nettix (case 42), which helps customers rent out underutilized products and industrial equipment, emphasizes improved access to a wide range of various machinery, while 24Rent (case 1), a car leasing service, emphasizes eliminated overheads, such as maintenance and insurance costs, and flexible usage by allowing multiple pick-up and return points.

SV-CVPs are usually transitional, as they facilitate the exchange of supplier-determined offerings, but focus on delivering access and usage experiences instead of ownership. In terms of focus, SV-CVPs tend to highlight enhanced customer experiences before, during, and after usage. For example, Maapörssi (case 36) offers a digital platform where construction firms can exchange surplus soil materials; the firm highlights the availability, predictability, and convenience of facilitated exchanges in the platform. In terms of explicitness, SV-CVPs usually feature little to no objective value quantification, but highlight the increased potential for improved usability and access, as well as reduced up-front and maintenance costs. SV-CVPs are usually formulated at a customer segment level, focusing on customers who utilize similar resources. For example, eRENT´s (case 18) CVP highlights benefits to rental agencies and construction firms, while Innorent´s (case 27) CVP emphasizes benefits to local authorities.

4.3. Optimize value

The CVPs that emphasized *optimize value* –logic (hereafter OV-CVPs) were built primarily on service and business model innovations that enable firms to enhance and/or extend resource usage, thereby creating more value from fewer resources or prolonging value creation from the same resources. Most OV-CVPs offered an X-as-a-service type of exchange, where previously sold resources were now sold mostly as capacity for on-demand basis. For example, by combining oil changes and analytics into oil-as-a-service, Fluid Intelligence (case 21) is able to

Table 4
Overview of key value creation logics in the circular economy and their CVP design elements.

CVP design elements				
Value creation logic	Resurrect value	Share value	Optimize value	Replace value
Illustrative cases from data: Firm and the offering	*Fortum (case 22):* Recycled plastic products from waste	*Ekorent (case 14):* A digital platform for leasing shared vehicles	*Fluid Intelligence (case 21):* Oil monitoring and maintenance as a service	*Spinnova (case 58):* Cellulose to replace cotton in textiles
	Pa-Ri Materia (case 46): Refurbished furniture	*Maapörssi (case 36):* A digital platform for exchanging surplus soil	*Lindström (case 35):* Management and leasing of work clothing as a service.	*CrossLam (case 9):* Wood to replace concrete in building materials
	Neste (case 40): bio-diesel from bio-waste		*Valtavalo (case 68):* LED lighting as a service	
Underlying innovation forms	Product & Process Innovations	Service & Business Model Innovations	Process & Business Model Innovations	Product Innovations
Benefits	Economic & Environmental	Economic & Functional	Economic, Functional, & Environmental	Functional, Social, & Environmental
	Equal product quality for a lower price, more efficient resource usage, waste recycling	Improved utility, flexible access & usage	Lower/no investment cost, improved efficiency, decreased environmental impact	Better quality and functionality, ethical and health benefits, reduced environmental impact
Recipients	Direct customers, supply chains, environment	(Resource) users	Direct customers	Direct customers, end users, environment, society
Perspective	Supplier-determined and unidirectional	Transitional	Mutually-determined and reciprocal	Transitional
Focus	Enhanced products	Enhanced customer and usage experiences	Enhanced customer outcomes	Enhanced products and customer experiences
Quantification	Weak and abstract quantification	Little to no quantification	Strong and explicit quantification	Weak and abstract quantification
Granularity	Customer segment level	Customer segment level	Firm level	Customer segment level

optimize oil management for vehicles and power plants. CVPs primarily emphasizing the optimize value –logic represented 15 out of the 74 cases in our dataset.

OV-CVPs typically emphasize economic and functional benefits to direct customers, especially extended usage potential, longer product life cycles, and overall cost savings. The key message that OV-CVPs articulate is that customers can optimize value from existing resources through improved application. For example, Valtavalo (case 68), a LED-lighting provider, highlights how customers can optimize lighting from an equal, if not a lower number of bulbs, and Fluid Intelligence (case 21), how the same amount of oil applied intelligently can last significantly longer.

OV-CVPs are usually mutually determined and reciprocal, as the supplier offers to take care of activities performed previously by the customer, while the customer is expected to relinquish not only the responsibilities, but also information on how, when, and according to what kind of specifications they want them to the performed. In terms of focus, OV-CVPs tend to highlight improved performance outcomes, ease of operations, and reduced risk and capital. For example, Tamturbo (case 63), supplier of compressed air-as-a-service, highlights the elimination of the high investment cost, as well as the delegation of time-consuming repair and maintenance tasks, and Solnet (case 57), an electricity system supplier, emphasizes that it will take care of the design and operation of solar power systems on the customer's behalf.

In terms of explicitness, OV-CVPs featured relatively strong and explicit quantification for many types of benefits, as almost all OV-CVPs highlighted an estimated calculation of the likely range or average percentage of value that customers were expected to gain. For example, LeaseGreen´s (case 33) CVP promises an average 24% reduction in energy costs and overall 120,000-ton reduction in CO2 emissions by 2017, while Enevo´s (case 16) CVP highlights a typical 25-50% reduction in logistical costs, and Fluid Intelligence´s (case 21) CVP a typical 40-80% reduction in oil consumption. OV-CVPs are usually formulated at a firm level, as they highlight customer benefits more broadly, or to multiple potential industries. For example, Fluid Intelligence (case 21) targets all customer segments where oil usage optimization is relevant, and Martela (case 37) and Naava (case 39) any customers who use office space in general.

4.4. Replace value

The CVPs that emphasized *replace value* –logic (hereafter RpV-CVPs) were built primarily on product innovations that enabled firms to replace existing products and/or materials with more valuable alternatives. Compared to the resurrect value logic, which is centered on restoring end-of-life products and promoting refurbished products as being as good as new ones, the replace value logic is centered on replacing existing products altogether, often highlighting that the new substitutes are significantly better than the existing alternatives. For example, Spinnova (case 58) has innovated a more sustainable substitute for cotton to be used in textiles, and CrossLam (case 9) has innovated new construction elements that can be made from wood instead of concrete. CVPs primarily emphasizing the replace value –logic represented 12 out of the 74 cases in our dataset.

RpV-CVPs typically emphasize functional, environmental, and social benefits to direct customers and societal stakeholders, especially in terms of improved products features, decreased environmental impacts, and potential social improvements. The key message that RpV-CVPs articulate is that customers can gain immediate functionality and societal performance improvements by replacing existing resources with their new alternatives. For example, CrossLam´s (case 9) CVP highlights how cross-laminated timber frames can facilitate faster, more convenient, and more environmentally friendly building processes compared to "traditional beam-based frames," and Entocube´s (case 17) CVP emphasizes how insects can be a less expensive and more sustainable raw material for agricultural operators than animal meat.

RpV-CVPs are usually transitional, as they emphasize the delivery of supplier-determined offerings, while highlighting improved customer and/or usage experiences that the replacing products and materials make possible. In terms of focus, RpV-CVPs tend to highlight improved product features and enhanced customer experiences during usage situations. For example, Fescon (case 19) emphasizes longer life cycles

and long-term cost savings from fluidized bedding materials for power plants, and Sulapac (case 61) highlights the easy use and disposal of its wood-based biodegradable packaging material.

In terms of explicitness, RpV-CVPs featured usually both weak and abstract value quantification, as they did not calculate potential cost savings, but made direct comparisons to existing products and materials in terms of functionality and environmental performance. For example, Fescon (case 19) highlights "less erosion" and "lengthened change intervals" when using fluidized boiler bed material instead of traditional materials, and Spinnova (case 58) promises "a lot of water and energy savings" when using cellulose over cotton in textiles. RpV-CVPs are usually formulated at a customer segment level, focusing on specific industries that can benefit most from the replaceable materials.

5. Discussion

In this study, we analyzed how B2B suppliers use CVPs to articulate value in the circular economy. In this section, we discuss the key observations and distinctive insights that emerged from the empirical analysis.

5.1. The role of innovations in different value creation logics in the circular economy

Sustainability-driven innovations are usually considered the key means of creating value in the circular economy (Prieto-Sandoval et al., 2018), but previous research has provided only a few insights into the differential effects of different innovation forms on value creation (c.f. Boons & Lüdeke-Freund, 2013). The findings from this study shed more light on the underlying effects of specific value creation logics in the circular economy.

For example, resurrect value –logic leverages product and process innovations to bring back disposed resources that would otherwise be considered waste, such as recycled plastics, and refurbished machinery. In terms of circularity, this logic aims to generate value primarily by closing different resource loops. The underlying innovations in the CVPs that reflected this logic often focused on specific resources, such as organic waste or recycled materials, and featured usually relatively modest or moderate innovations, such as recycled clothing or refurbished equipment that brought the previously disposed resource back into circulation. *To leverage the resurrect value logic, the supplier must be able to regenerate the value of used and usually "worthless" resources cost-efficiently, as evidenced by the importance of economic benefits in CVPs that emphasized this logic.* Compared to existing literature, the resurrect value logic resonates with the principles of the circular economy (Ghisellini et al., 2016), as it is focused on finding innovative ways to reuse and recycle used and disposed resources.

Share value –logic leverages service and business model innovations to make an underutilized resource available to multiple actors. In terms of circularity, this logic aims to generate value primarily by narrowing the resource flows. The underlying innovations in CVPs that reflected this logic focused primarily on new use practices, such as equipment sharing or machine renting, and usually featured relatively novel and radical innovations, such as rental services or digital platforms that enabled actors to use the same resource in new and innovative ways. *To leverage the share value logic, the supplier must be able to enable B2B customers to move from ownership to use of shared resources in practice through a) delivering resources to the right place at the right time through services, or b) facilitating customers to exchange resources through a platform.* Compared to existing literature, the share value logic resonates with the principles of the sharing economy, which emphasizes the role of peer-to-peer transactions and community platforms to maximize the value of idle or underutilized assets (Belk, 2014).

The optimize value logic leverages process and business model innovations to derive more value from a specific resource(s) for a single customer. This reduces underutilization of resources, but through optimizing a resource use for a single actor, rather than spreading the resource to multiple actors. In terms of circularity, this logic aims to generate value primarily by narrowing resource flows by improving the efficiency and output of specific resources. The underlying innovations in CVPs that reflected this logic focused primarily on new use practices and business models, where the supplier assumes responsibility for activities previously performed by the customer. This logic featured usually relatively moderate business model innovations, such as clothing- or lighting-as-a-service models, where the actual use practices did not change as much, but responsibility shifted from the customer to the supplier, which could often perform them more efficiently. *To be able to leverage the optimize value logic, the supplier must have a deep understanding of the customers' processes, and be able to demonstrate how the customer can get more value from a resource.* Compared to existing literature, the optimize value logic seems to resonate with the principles of servitization (Kowalkowski, Gebauer, & Oliva, 2017; Spring & Araujo, 2017), which is focused on innovating new service-based offerings that provide added value to customers.

The replace value logic leverages product innovations to replace existing products or components with new materials that have longer life cycles and/or extended utilization periods. In terms of circularity, this logic aims to generate value primarily by slowing resource flows and prolonging use periods. The underlying innovations in CVPs that reflected this logic focused almost exclusively on novel resources, such as alternative building materials or renewable energy, and thus, usually featured radical innovations. *To leverage the replace value logic, the supplier must have a profound understanding on the implications of using different resources and/or materials in customers' processes, and acknowledging their impact on sustainability.* Compared to existing literature, the replace value logic seems to resonate with the principles of traditional product marketing (Kotler & Armstrong, 2018), which is focused on innovating better products or more functional product features. Table 5 summarizes the key characteristics of each value creation logic.

Overall, the replace and optimize value logics are relatively well

Table 5
Overview of the key characteristics of different value creation logics in the circular economy.

Key value creation logics in the circular economy	Underlying innovation forms	Circularity goal	Focus of innovation	Scope of innovation	Links to contemporary B2B literature
Resurrect value	Product & Process	Closing resource loops	Resource (Converting waste to a resource)	Modest/Incremental	Circular economy
Share value	Service & Business Model	Narrowing resource loops	Practice (New usage practices)	Novel/radical	Sharing economy
Optimize value	Process & Business Model	Narrowing resource loops	Practice (New operating practices)	Incremental/Moderate	Servitization
Replace value	Product	Slowing resource loops	Resource (More sustainable materials)	Radical	Product marketing

aligned with traditional B2B marketing literature. For example, the optimize value relies on close relationships with customers, which is very typical for relationship marketing literature (Morgan & Hunt, 1994). The replace value logic relies on deep understanding of customers' value-in-use (Grönroos, 2011). In contrast, the resurrect and value logics rely more heavily on facilitating better resource circulating, making them more closely aligned with circular economy literature.

5.2. Key differences between CVPs in the linear and the circular economy

The key differences between CVPs in the linear and the circular economy seem to relate to scope and perspective. In other words, CVPs in the linear economy tend to be relatively inward-looking and supplier-driven, as they are built around existing offerings that require little customer input. The CVPs emphasize improved value-in-exchange opportunities to specific business customers that are realized through superior product features, and deliver primarily economic or functional benefits. In contrast, CVPs in the circular economy tend to be outward-looking and market-driven, as they are built around novel innovations that require active participation from not only direct customers but also broader ecosystem actors. Furthermore, CVPs in the circular economy tend to emphasize new value-in-use opportunities for broader societal stakeholders that are realized through enhanced customer and usage experiences, and deliver environmental and socioeconomic value.

Overall, the distinctive features of CVPs in the circular economy compared to the linear economy seem to be well aligned with contemporary marketing literature, which increasingly emphasizes that CVPs should be actively co-created with multiple stakeholders in broader societal ecosystems (Chandler & Lusch, 2015; Frow et al., 2014). Table 6 provides a summary of the key differences between CVPs in the linear and the circular economy in terms of design elements.

5.3. CVPs as strategic tools for changing needs in the market and society

In the linear economy, CVPs have been traditionally considered supplier firms' most important strategic tools for communicating value primarily to target customers, and secondarily, albeit often tangentially, to broader stakeholders (Ballantyne et al., 2011; Payne et al., 2017). However, this view tends to be very supplier-determined, and emphasizes the value that is embedded in the supplier´s offering and is delivered to (passive) customers (Eggert et al., 2018).

In contrast, in the circular economy, the role of the CVPs shifts from narrow and supplier-determined promises of value to broader strategic messages that communicate how individual customers, related value chains, and the wider society could co-create value, if they were to adopt new innovations and related novel use practices. In other words, in the circular economy, CVPs seem to function as strategic tools that suppliers can, and do, use to actively influence, facilitate, and shape the needs in the broader market and at the societal level. This view is well in line with emerging research that considers the role of CVPs in market-scripting (Storbacka & Nenonen, 2011) or market-driving strategies (Nenonen, Storbacka, Frow, & Payne, 2015), and shifting narrow and economic cost-benefit analyses in the private sector to broader public value assessments (c.f. D'Antone et al., 2017; Nailer, Prior, & Keränen, 2019).

An important consideration is that most of the new value that CVPs in the circular economy offer can be unlocked only if multiple customers or broader ecosystems—not only individual customers—are willing to adopt the innovations that are needed to realize the underlying sustainable value potential. This makes CVPs in the circular economy genuinely reciprocal (Ballantyne et al., 2011), and shows empirically how CVPs operate as invitations from actors to other actors to engage in value co-creation in service systems (Chandler & Lusch, 2015; Frow et al., 2014).

6. Conclusions

6.1. Contributions and theoretical implications

The findings of this study contribute to three priority areas in current research. First, this study contributes to contemporary CVP literature (Eggert et al., 2018; Payne et al., 2017) by broadening the extant research, which has thus far focused primarily on the linear economy, and illuminating how CVPs manifest in the circular economy. Previous CVP studies have focused on single-case studies in specific industries (e.g. Corvellec & Hultman, 2014; Payne & Frow, 2014b). We expand this perspective by conducting an extensive analysis of 74 documented CVPs in the circular economy across multiple industries and offering types, therefore providing a comprehensive and holistic picture of the variations of CVPs in the circular economy. Specifically, we theoretically analyze and empirically deconstruct the architecture of CVPs that firms use in the circular economy. This study provides novel empirical insights into how CVPs in the circular economy are built on sustainability-driven innovations, and how firms use different CVP design elements to articulate novel value creation opportunities to customers and other stakeholders. Overall, these findings respond to several recent calls to provide a more transparent understanding of CVP elements and their configurations that promise superior value to customers (Bohnsack & Pinkse, 2017; Payne & Frow, 2014a).

Furthermore, previous studies have highlighted the need to understand how firms can design CVPs that consider environmental and social elements as a key priority (Bohnsack & Pinkse, 2017; Payne et al., 2017). To address these calls, and expand the current literature, we identify four typical value creation logics that characterize CVPs in the circular economy. Each value creation logic is built on different combinations of sustainability-driven innovations, embodies different CVP design element configurations, and highlights alternative ways to include, articulate, and signal different environmental and social elements in CVPs. This expands the current literature on sustainable value propositions (e.g., Patala et al., 2016), where the primary focus has been on the need to expand benefits and recipients, without consideration of other design elements of a CVP.

Second, this study contributes to the industrial marketing literature by demonstrating how B2B suppliers can leverage sustainability in their value communication efforts. While extant industrial marketing literature has emphasized that sustainability is a major source of competitive advantage in B2B markets (Sharma, Iyer, Mehrotra, & Krishnan, 2010; Spring & Araujo, 2017) scholars have primarily focused on how suppliers can innovate (Mariadoss et al., 2011; Varadarajan, 2017), and co-create (Lacoste, 2016), sustainable offerings with their customers and stakeholders. In contrast, only a few studies have examined how B2B suppliers can communicate the benefits of adopting their sustainable offerings to various stakeholders (c.f. Patala et al., 2016), but most of this literature is focused on branding or positioning strategies (Kapitan et al., 2019; Kumar & Christodoulopoulou, 2014; Scandelius & Cohen, 2016). The findings from this study complement previous research by showing how B2B suppliers use CVPs to communicate how the suppliers will (co-)create sustainable value for and with their customers and broader stakeholders. Compared to branding and/or positioning strategies, which usually emphasize an internal intended perspective, relatively intangible benefits, and a values-driven communication approach (c.f. Kumar & Christodoulopoulou, 2014), CVPs emphasize an external perspective, relatively tangible benefits, and a value-driven communication approach. In other words, whereas sustainable branding and/or positioning strategies may communicate that the

Table 6
Summary of the key differences between CVPs in the linear and the circular economy.

CVP design elements	In terms of CVP design, answers the question:	CVPs in linear economy	CVPs in circular economy
Underlying elements			
Firm's value creation logic	What is the fundamental value creation logic that the architecture of CVP reflects?	Differentiation advantage or cost savings	Resurrecting, sharing, optimizing, or replacing value
Core offering	On what resources or capabilities is the CVP built on?	Product/service offerings	Product, service, process, or business model innovation
Key design elements			
Benefits	What kind of benefits CVP emphasizes	Economic benefits, monetary value	Economic, environmental functional, and social benefits Environmental and socio-economic value
Recipients	To whom the CVP is targeted	Business customers or key decision makers in buyer–supplier dyads	Business customers, value chain partners, end users, and other stakeholders in broader societal ecosystems
Perspective	Whether the CVP is a unidirectional and supplier-determined promise of value, or a reciprocal and mutually determined proposal of value	Usually supplier-initiated statements, customers treated mostly as passive recipients	Usually mutually determined proposals, customers, and other ecosystem actors treated as active participants
Focus	Whether the CVP emphasizes value-in-exchange, value-in-experience, or value-in-use	Superior product features or value embedded in offerings (value-in-exchange)	Enhanced customer, outcome, and usage experiences (value-in-use)
Explicitness	How explicitly or implicitly organizations articulate their value propositions to internal and external audiences	Unique, yet unquantified offering features	Enhanced, yet mostly unquantified, customer and use experiences
Granularity	Whether the CVP is formulated at the firm, customer segment, or individual customer level	Emphasis on non-specific firm-level CVPs	Emphasis on customer-segment level

supplier is sustainable, CVPs articulate in detail how the supplier's sustainability can be translated into relevant economic, environmental, and social benefits for customers and other stakeholders, and how these benefits are realized.

Third, this study contributes to circular economy literature by illustrating how B2B suppliers can use CVPs to facilitate a systematic transition toward the circular economy. The extant circular economy literature has examined how innovations (de Jesus, Antunes, Santos, & Mendonça, 2016; Prieto-Sandoval et al., 2018) and circular business models (Goyal et al., 2018; Lewandowski, 2016; Ranta, Aarikka-Stenroos, & Mäkinen, 2018) can help to drive the transition toward the circular economy. However, scholars have rarely investigated the role of CVPs in this process (Boons & Lüdeke-Freund, 2013). To fill this gap, the findings from this study illuminate how suppliers articulate CVPs that reflect four fundamentally different value creation logics in the circular economy, and communicate how alternative logics deliver sustainable value for different stakeholders in the wider (eco)system. Furthermore, by illuminating the key differences between CVPs in the linear and the circular economy, this study develops new insights on how actors in the linear economy can "embed circular economy principles into their value propositions," which remains an important, but little understood, issue in contemporary circular economy research (Manninen et al., 2018).

6.2. Managerial implications

From a managerial perspective, this study offers several important insights into designing CVPs that highlight sustainability elements, which are likely to resonate with customers and broader stakeholders in the circular economy. First, the results illustrate that CVPs in the circular economy go beyond distinct product-service offerings and monetary benefits, and communicate how novel and often sustainability-driven innovations can unlock new value creation opportunities for diverse stakeholders in terms of wider economic, functional, environmental, and social benefits. However, to capitalize these new value creation opportunities, suppliers must emphasize several elements in the CVPs that communicate what kind of new value outcomes different stakeholders can expect, and how they will experience and realize them.

To help firms design CVPs in the circular economy, Tables 4 and 6 provide easily accessible managerial templates that can be used to analyze whether and how different elements are (or could be) visible in the firm's current CVP. For example, Table 4 illuminates how firms following alternative value creation strategies in the circular economy use specific CVP elements to communicate value, and is likely most useful to firms already operating in the circular economy. Table 6 illustrates the key differences between CVPs in the linear and the circular economy. This provides guidance on how different CVP elements change when firms shift their focus to the circular economy, and is likely most useful to firms that want to transition from the linear to the circular economy.

Second, this study indicates that CVPs in the circular economy usually reflect one of four alternative, and sustainability-driven value creation logics (resurrect, share, optimize, and replace value), and emphasize the key CVP design elements that characterize each logic (see Table 4). Managers who wish to convey sustainable or circular elements in CVPs should carefully consider which of the value creation logics they aim to follow, and ensure that their CVPs embody the design elements that resonate with the corresponding logic. This may require a drastic shift in the managerial mindset, as the value creation strategies in the circular economy emphasize novel innovations and active stakeholder participation in the external system, rather than internal offerings and passive customer insights.

Furthermore, given the relatively distinct nature of each strategy, managers might be best off by following one primary strategy, instead of trying to master many. For example, the resurrect and replace value logics involve product innovation–oriented and passive customer input elements, while the share and optimize value-oriented logics involve business model–oriented innovation and active customer input elements. In our empirical data, most of the CVPs reflected only one primary value creation logic, and this is likely because different logics were built on different innovation forms, circularity goals, and supplier capabilities (see Table 5). Thus, adopting multiple value creation logics is likely to be very resource-intensive, and has the potential downside of diluting the firm's differentiation ability and the accumulation of expertise in specific areas.

Third, the analysis revealed that the alternative value creation logics are not based on single forms of innovations, but instead, on

different combinations of product, service, process, and business model innovations that offer either new and enhanced resources or resource use practices (c.f. Skålén et al., 2015). This suggests that managers seeking to introduce or integrate new sustainability-driven innovations in their B2B offerings and CVPs should not focus on single forms of innovations (i.e., material recycling), but instead, aim to combine and bundle different innovations together to create and facilitate more holistic value experiences and outcomes value for customers and other stakeholders.

Finally, we observed two under-utilized opportunities in the analyzed CVPs in the circular economy. First, although several CVPs communicated a broad range of economic, functional, and environmental benefits to various stakeholders, only a few stressed social benefits, such as ethical or health-related outcomes. Given the increasing importance of social buying criteria in contemporary markets (Kotler, 2011; Porter & Kramer, 2011), this finding suggests that communicating social benefits in CVPs is currently an undercapitalized, yet relatively low-hanging, differentiating opportunity for many B2B suppliers. Second, although explicit value quantification is at the heart of CVPs in B2B markets, and a key tactic for reducing customers' buying anxiety (Anderson et al., 2006; Terho et al., 2012), most of the analyzed CVPs in the circular economy included low or no quantification elements. This suggests that increasing the explicitness and value quantification element should be one of the first, and likely one of the most effective ways to improve and strengthen current CVPs in the circular economy.

6.3. Limitations and suggestions for future research

Given that this study is exploratory, and based on a document analysis of publicly available CVPs of circular economy–driven Finnish B2B suppliers, the study has natural limitations, some of which open up potential avenues for future research. First, the analysis focused on the CVPs of a purposefully sampled set of B2B suppliers, and this might limit the findings. However, as we analyzed an extensive set of CVPs from multiple firms and industries, it seems likely that most of the findings can be generalized to some extent to other industries and geographic contexts. To expand the findings and the contemporary CVP literature, future studies could compare how firms use CVPs in the circular economy in different business, geographic, and cultural contexts. For example, the data allowed us to identify four emerging value creation logics in the circular economy. However, these logics are by no means exhaustive, but more likely illustrative of the strategies that B2B firms employ in the Finnish circular economy context. Other value creation strategies that emphasize aspects that were scarcely visible in the data, such as ethical or medical considerations (c.f. Frow, McColl-Kennedy, & Payne, 2016), might be feasible, and thus of interest for future research. More broadly, firms operating in business-to-business, business-to-consumer, and business-to-government contexts, or in different geographical markets, such as Europe, the US, and China (c.f. Ranta, Aarikka-Stenroos, Ritala, & Mäkinen, 2018), are likely to employ drastically different business, institutional, sustainability, and value creation logics. Comparing the implications to CVPs would be a highly important and interesting research avenue.

Second, we applied a document analysis, which enabled us to capture and analyze a broad range of diverse CVPs in written, fixed, and predetermined form. This allowed us to portray a rich picture of B2B suppliers' current CVPs in the circular economy, but this provides only a static perspective, and limited insights into how and why firms have constructed specific CVPs in the circular economy. Therefore, future studies could employ in-depth case studies and longitudinal observations to shed more light on how and why firms develop and communicate specific CVPs in the circular economy, and how firms alter different CVP elements as a response to different customer and market reactions.

Third, although CVPs play an important role as a firm's key strategic tools for communicating value to external stakeholders, aligning internal activities, and shaping broader markets (Payne et al., 2017), the analysis focused mostly on the CVPs' role as external value communication devices. Thus, future studies could adopt a firm-level perspective, and employ deep single-case or action research studies to examine how CVPs in the circular economy facilitate changes in firms' internal innovation activities toward sustainable and market-driven offerings. Another interesting alternative could be to adopt an ecosystem-level perspective (Aarikka-Stenroos & Ritala, 2017), and explore how firms employ CVPs to drive and shape other actors' behaviors in linear economy–oriented systems toward the circular economy, and how other actors in the same systems experience, perceive, and react to different CVPs.

Fourth, while firms can make firm-, segment- and customer-level CVPs (Payne et al., 2017), our findings revealed only firm- and customer segment level CVPs in CE. This is likely due to the nature of our data, which is drawn from a publicly available case repository of innovative and best practice exemplars, and fundamentally, based on supplier-driven and static descriptions of CVPs. In contrast, customer-level CVPs are usually negotiated, co-created, and revised together with the customers, requiring direct customer input. In addition, customer-level CVPs should ideally involve explicit quantification of key differentiators and cost drivers (c.f. Anderson et al., 2006), which is both sensitive and competitive information, and as such, unlikely to be displayed in a puclicly available material. Consequently, an interesting avenue for future research would be to explore how suppliers co-create customer-level CVPs in CE together with their customers, what kind of inputs different stakeholders infuse to this process, and how the expectations and perceptions, as well as the actual content of the CVP evolve over the course of supplier-customer engagements.

Finally, we employed qualitative research methods to explore how B2B suppliers articulate CVPs in the circular economy. Although the purposive sample included documented examples of successful CVPs in multiple industries, the findings provide only limited insights in terms of the effectiveness of the analyzed CVPs. Therefore, an important area for future research would be to employ quantitative research methods and cross-sectional surveys to explore the potential performance effects of different CVPs in a circular economy. Another interesting, and highly relevant, avenue would be to use field experiments and conjoint analyses to compare when and under what conditions different customers prefer CVPs that emphasize alternative value creation logics, and/or different design elements.

Overall, although there is a growing body of research on CVPs in the linear economy (c.f. Payne et al., 2017), their role in the sustainability-driven circular economy remains an increasingly important, yet little understood and critically underexplored, area. We hope that this study encourages further research and empirical inquiries into this phenomenon, especially in the B2B domain, which takes into account the broader effects of CVPs across value chains, networks, and societal ecosystems (Vargo & Lusch, 2011).

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Appendix A

Case	Offering	Industry	Firm size	Revenue
1. 24Rent	Rental of shared cars	Car rentals	1-10 personnel	1-50 M€
2. 3Step IT	IT equipment life-cycel management service	Information Technology Services	over 250 personnel	over 50 M€
3. Amerplast	Recycled plastic bags	Plastics; Packaging	over 250 personnel	over 50 M€
4. Aquazone	Waste water treatment plants	Waste treatment	1-10 personnel	1-50 M€
5. Arctic Biomaterials	Bio-based plastic	Materials	10-250 personnel	less than 1 M€
6. Betulium	Polymers from agricultural waste	Biotechnology	1-10 personnel	less than 1 M€
7. BioGTS	Biodiesel plant	Energy	10-250 personnel	1-50 M€
8. CrisolteQ	Turning metal and mining industry waste streams into recycled products	Recycling	10-250 personnel	less than 1 M€
9. CrossLam	Wooden construction elements	Construction	10-250 personnel	1-50 M€
10. Destaclean	Construction material from recycled wood fibre	Construction	10-250 personnel	1-50 M€
11. Durat	Interior design materials from plastic waste	Chemical stone products	10-250 personnel	1-50 M€
12. Ecolan	Organic fertilisers	Forest management	10-250 personnel	1-50 M€
13. Eko-expert	Recycled mineral wool	Construction	10-250 personnel	1-50 M€
14. Ekorent	Rental and sharing service for electric cars	Transportation and logistics	1-10 personnel	less than 1 M€
15. Ekox	Used IT equipment	Information Technology Services	10-250 personnel	less than 1 M€
16. Enevo	Waste Management optimization with internet-of-things	Information Technology	10-250 personnel	1-50 M€
17. Entocube	Equipment and automation solutions for insect production	Agriculture	1-10 personnel	less than 1 M€
18. eRENT	Service platform for sharing industrial assets	Software	1-10 personnel	less than 1 M€
19. Fescon	Fluidised bed material for power plants	Materials	10-250 personnel	1-50 M€
20. Finsect	Insect farming technology	Agriculture	1-10 personnel	less than 1 M€
21. Fluid Intelligence	Machinery lubrication as a service	Machinery	1-10 personnel	less than 1 M€
22. Fortum	Recycling, sorting and processing plastics into recycled material	Waste treatment	over 250 personnel	over 50 M€
23. Gasum	Biogas and nutrients	Energy	over 250 personnel	over 50 M€
24. Globe Hope	Clothing and accessories from surplus textiles	Textile	10-250 personnel	N/A
25. Gold & Green	Plant protein from oats and legumes	Food	10-250 personnel	1-50 M€
26. Infinited Fiber	Textile from recycled fibres	Textile; Chemical	1-10 personnel	less than 1 M€
27. Innorent	Movable rental facilities	Construction	1-10 personnel	less than 1 M€
28. Jarmat	Biodegradable lubricating oil	Chemical products	1-10 personnel	1-50 M€
29. Kekkila	Fertilisers from organic waste	Horticulture	10-250 personnel	over 50 M€
30. Konecranes	Warehouse management as a service	Mechanical engineering; manufacture of lifting equipment	over 250 personnel	over 50 M€
31. Kotkamills	Biodegradable paper cups and packaging	Manufacture of paper and cardboard products	over 250 personnel	over 50 M€
32. Lassila & Tikanoja	Solution for reducing food waste	Waste treatment	over 250 personnel	over 50 M€
33. LeaseGreen	Energy-efficiency solutions for buildings	Heating, plumbing, and air-conditioning installation	10-250 personnel	1-50 M€
34. LemKem	Lighting as a service	Electrical equipment	10-250 personnel	1-50 M€
35. Lindström	Work uniforms as a service	Textile rental	over 250 personnel	over 50 M€
36. Maapörssi	A recycling service for surplus excavation material	B2B administrative and support services	1-10 personnel	1-50 M€
37. Martela	Work environment as a life cycle service	Furniture	over 250 personnel	over 50 M€
38. Metener	Small-scale organic waste treatment plants	Technical services	1-10 personnel	1-50 M€
39. Naava	Green walls as furniture	Health technology	10-250 personnel	1-50 M€
40. Neste	Diesel from waste and residues	Oil; Energy	over 250 personnel	over 50 M€
41. Netled	Multi-layer farming solutions	Electrotechnical design; agriculture	1-10 personnel	1-50 M€
42. Nettix	Marketplace for renting a variety of products	Software	10-250 personnel	1-50 M€
43. Novarbo	Vertical farming solutions	Agriculture	10-250 personnel	1-50 M€
44. Palpa	Deposit-based recycling system for drinks packaging	Services	10-250 personnel	over 50 M€
45. Paptic	Bio-based material from cellulose	Materials	10-250 personnel	less than 1 M€
46. Pa-Ri Materia	Used office furniture	Furniture	10-250 personnel	1-50 M€
47. Ponsse	Reuse of old machinery in spareparts	Forestry machinery	over 250 personnel	over 50 M€
48. PureWaste	Recycled material and garments from textile waste	Manufacture of garments and accessories	1-10 personnel	1-50 M€
49. Raisioagro	Fish feed from local fish species	Agriculture	10-250 personnel	N/A
50. Rakeistus	Technology or service for recycling biowaste to fertiliser	Mechanical engineering; Industrial machinery	1-10 personnel	1-50 M€

51. RePack	Reusable postal packaging as a service	Packaging	1-10 personnel	less than 1 M€
52. ResQ	Marketplace for surplus food	Software	10-250 personnel	less than 1 M€
53. Robbes	Smart greenhouses	Horticulture	10-250 personnel	1-50 M€
54. Sharetribe	Service to establish a marketplace website	Software	10-250 personnel	less than 1 M€
55. Silmusalaatti	Sustainably grown salad sprouts	Agriculture	1-10 personnel	less than 1 M€
56. Soilfood	Recycled nutrients for agriculture	Agriculture	10-250 personnel	1-50 M€
57. Solnet	Solar power systems as a service	Electricity sales	1-10 personnel	1-50 M€
58. Spinnova	Textile fibre from cellulosic mass	Textile	1-10 personnel	less than 1 M€
59. SRHarvesting	Recycled parts of repairing tractors	Farming and forestry machinery trade	10-250 personnel	1-50 M€
60. St1	Ethanol from organic waste	Oil; Energy	over 250 personnel	over 50 M€
61. Sulapac	Wood-based packaging for cosmetics	Packaging	1-10 personnel	less than 1 M€
62. Suomen Savupiipputeollisuus	Chimney bricks from recycled materials	Construction	1-10 personnel	less than 1 M€
63. Tamturbo	Compressed air as a service	Compressor manufacturing and sales	10-250 personnel	1-50 M€
64. Tarpaper	Asphalt raw material from roofing felt	Recycling	1-10 personnel	1-50 M€
65. TouchPoint	Work clothing service	Textile	1-10 personnel	1-50 M€
66. Tracegrow	Minerals from recycled alkeline batteries	Manufacture of basic non-organic chemicals	1-10 personnel	less than 1 M€
67. UPM	Biocomposites from plastic waste	Laminate manufacturing; Forestry	over 250 personnel	over 50 M€
68. Valtavalo	Led lighting as a service	Electrical equipment	10-250 personnel	1-50 M€
69. Valtra	Remanufactured tractor gearboxes	Machinery	over 250 personnel	over 50 M€
70. Watrec	Biogas plants	Environmental technology	10-250 personnel	1-50 M€
71. Venuu	Marketplace for renting event venues	Services	10-250 personnel	less than 1 M€
72. Versofood	Vegetable protein from whole broad beans	Wholesale and retail	1-10 personnel	1-50 M€
73. Wimao	Biocomposite products from recycled materials	Manufacturing	1-10 personnel	less than 1 M€
74. ZenRobotics	Waste-sorting robot	Waste treatment technology	10-250 personnel	1-50 M€

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