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Circular Business Model Value Dimension Canvas: Tool Redesign for Innovation and Validation through an Australian Case Study

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Abstract: Circular business models (CBMs) are integral to the concept of the circular economy (CE). The aims of the study are to (1) redesign a canvas for CBM and (2) validate it through a single case study. The developed canvas is called the "Circular Business Model Value Dimension Canvas". For the validation, a semi-structured interview with a social enterprise (SE) operating in hybrid CBM (i.e., resource recovery, sharing platform, and product use extension) in Australia has been performed. Results showed that a successful hybrid CBM for a SE necessitates the integration of forward and reverse supply chains through partnerships with new product retailers and resource recovery companies. Other important factors include the presence of physical stores, an effective product return strategy, initial funding support from the government, the employment of young individuals with special needs, and the promotion of behavioral change among low-income customer segments. Although the canvas was applied to the enterprise, it can also be applied to other organizations as the canvas integrates all essential components for business modeling. The proposed canvas serves as a supportive tool for CBM innovation (CBMI) and provides a framework for researchers to investigate the CBMI process in organizations transitioning from linear to circular.

Keywords: circular economy; business model innovation; business model canvas; social enterprise; business model theory; sustainability

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1. Introduction

Unprecedented CO_2 emissions and global warming, critical material supply chain complexity for green renewable energy transition, unstable price of non-renewable energy sources, unprecedented plastic waste generation, and misplaced waste stream in land and ocean bodies are some of the alarming issues that the world is currently experiencing. Scientists and policymakers already understand that such ever-increasing consequences result from the so-called linear economy responsible for take-make-dispose-based economic growth. Radical and innovative approaches such as the circular economy (CE) are now considered the vital pathway to reducing the impact of material and energy use on the environment while doing business by taking care of people and the community. However, due to the emergence of the concept of CE and especially the circular business model (CBM) as an operational mechanism transitioning the linear business to a circular one, a specific innovation tool must be utilized that provides better clarity in defining the refined structure of a circular business within an existing business operation process or in a new organization which incepted from the beginning with CE strategies, principles, and business model (BM) (more details on Section 2.2). According to P. P. Pieroni et al. [1] conceptual frameworks are instrumental in such contexts, and the authors presented a diverse range of those. Geissdoerfer et al. [2] showed the types of frameworks: reference models, requirements, and classifications. Reference models are the frameworks that are tools and visual frameworks representing CBM in its components. Among the BM, the

researchers have widely used canvas as a tool (hereafter traditional BM canvas (BMC)), developed by Osterwalder and Pigneur [3]. However, such a canvas was not designed for CBM.

Although in tool development, no explicit theory was utilized by Geissdoerfer, Pieroni, Pigosso, and Soufani [2] (i.e., only CBM strategies were applied), however, in their recent review on CBM, the authors mentioned several theories associated with CBM research. They mentioned product development theory (i.e., focused on product lifecycle perspectives considering sustainability aspects somewhat circular economy concept), servitization theory (i.e., more towards defining product–service systems (PSS) and associated approach integrating the environmental and economic perspective of BM innovation), disruptive innovation theory (i.e., for the case of radical innovation developed by start-ups), agency theory (i.e., align with the resource acquisition theory), stakeholder management theory (i.e., highlighting environmental sustainability perspectives among stakeholders in a BM). Details on other associated theories can be found in Section 2.3.

To understand and redesign the core elements and structure of a CBM, such canvas must be modified by including the CBM and sustainability concepts, strategies, archetypes, and value dimensions. For example, the reverse logistics perspective needs to be more present in the traditional BMC, as it only focuses on the forward supply chain rather than recovery sides under the building block of the (distribution) channels. According to Salvador et al. [4], the conventional BMC was designed for something other than CBM visualization. The study's authors argued that there is a need for developing a framework for business modeling that could influence CE strategies in business as opposed to traditional BMC, as it mainly depicts the linear BM. Several researchers in CBM research directly applied and modified this tool for analyzing CBM or developing new CBM. Details of those tools are described in Section 2.4. Sustainability inclusion has already been observed by some researchers using the canvas modified accordingly considering the triple bottom line (e.g., social, economic, and environmental perspective) as part of the traditional BMC and, to some extent adding extra building blocks in the canvas (more details can be found on Section 2.4.1). Very few authors developed BMC, primarily focusing on CBM in general (i.e., some canvases that are more sector and business specific, for example, nature-based BMC). Furthermore, from the Australian contexts, there are no concrete examples found that show how CBM is designed from the business modeling perspective which could essentially provide necessary directions for future entrepreneurs following the same or advanced path (more details in Section 2.6). Little is known what the key elements and factors are (e.g., improved reputation, risk management, employee engagement, innovation, and long-term profitability from sustainability and circularity perspectives) that should be included when modeling a (hybrid) CBM.

The aims of this research are to redesign BMC (for CBM) that incorporates all the core aspects or components or building blocks of a CBM and to validate the canvas by applying it to a circular business as a case study highlighting the suitability of the building blocks, segmented according to various value dimensions.

The research contribution of this study in the CBM literature is through developing a BMC called "Circular Business Model Value Dimension Canvas" that extends the core elements to several building blocks such as risk assessment and management perspectives, product and material characteristics, ecosystem activities and dedicated CE goal and scope and sustainability mission and action related aspects (more details are given in Section 3). Furthermore, aspects such as circular design, CE principles, CE analytics, circular value chain, unique circular value proposition, circular design, circular strategies, circularity evaluation, CE vision at the organizational level, circular business network, and product lifecycle management are comprehensively combined in the developed canvas of this study which was found isolated in various canvases in previous studies. With these aspects, this study provides a theoretical contribution to business model theory (BMT). The study's findings also contribute to several theories, especially social entrepreneurship theory and stakeholder management theory connecting the CBM as an independent and emerging

theory. It also provides a contextual and operational understanding of a social enterprise's business model innovation (BMI) process when seen from the lens of CBM. Applying the canvas to a circular business operating with a hybrid mechanism (i.e., combining product lifespan extension, resource recovery, and sharing platform type CBM) within the Australian context reveals the dynamic nature and circular business model innovation (CBMI) processes, which has not been done before. It also brings the social enterprise perspective within the context of CBM, paving the future development needs. Another critical contribution is that although many of the canvases have been developed in the CBM literature, only some have validated those with a real-world case study. This is conducted in the present study, highlighting the applicability and suitability of the canvas as part of the validation process. Thus, this study provides a theoretical contribution and implications for the practical use of the canvas.

After this introduction, Section 2 provides an elaborate literature review on CE, CBM, theories on CBM, canvas, and framework-based CBMI tools, social enterprise, and CBM in general and the Australian context of CBM. Section 3 describes the core components of the CBM value dimension canvas developed here in this article, Section 4 explains the methodology, and Section 5 shows the results. Section 6 presents a discussion, while Section 7 highlights the limitations of the study with some future research directions, and finally, Section 8 ends with a conclusion.

2. Literature Review

2.1. Circular Economy

According to Ellen MacArthur Foundation [5], "A circular economy is an industrial system that is restorative or regenerative by intention and design. . . . It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models". Thus, from this definition, it is seen that the business model (BM) is an essential part that must be considered to have a CE. There are three main principles of CE, (P1) eliminate waste and pollution, (P2) circulate products and materials (at their highest value), (P3) regenerate natural ecosystem, and there are two distinct cycles with the concept (e.g., technical (P1 and P2-based) and biological cycle (P3-based) [5]. Subsequently, Kirchherr et al. [6] analyzed 114 different definitions of CE, indicating the research field's intensity. At the same time, Potting et al. [7] proposed ten separate Rs contributing to circularity (including R0—refuse).

2.2. Circular Business Model

An Organization for Economic Co-operation and Development (OECD) document published by Ekins et al. [8], named these strategies as circularity strategies (within a production chain). Therefore, a business model that incorporates Rs (hereafter R-strategies of CE strategies considered in this paper) and essentially follows the principles in its operations (both internally and externally) should be called a CBM. Geissdoerfer, Pieroni, Pigosso, and Soufani [2] defined CBM as "business models that are cycling, extending, intensifying, and/or dematerializing material and energy loops to reduce the resource inputs into and the waste and emission leakage out of an organizational system. This comprises recycling measures (cycling), use phase extensions (extending), a more intense use phase (intensifying), and the substitution of products by service and software solutions (dematerializing)". In this definition, Geissdoerfer, Pieroni, Pigosso, and Soufani [2], applied the CBM strategies—cycling, extending, intensifying, and dematerializing. These strategies were the modification or further characterization of the strategies (of slowing and closing the loop) that were previously provided by Bocken et al. [9] in two segments: (a) at the circular product design level and (b) at business model-level strategies. By adding "narrowing" and "regenerating" to the previous two strategies, Konietzko et al. [10] called them resource strategies (i.e., the flow of energy and material). The CBM archetypes and typology are still an emerging research area. There are a lot of definitions and typologies

that have been developed. The most simplistic categorization in the Nordic Innovation Playbook has been made for CBM. According to Nordic Innovation [11], commonly, there are five types of CBM—(1) circular inputs, (2) sharing platform, (3) product as a service, (4) product use extension, and (5) resource recovery.

2.3. Theories in CBM

Analyzing theoretical perspectives is also critical when developing a tool and analyzing specific case studies. Lately, CBM has received tremendous attention among researchers from various disciplines, such as business, operations management, and social and political science. As an evolving research stream and urgency of the issue, researchers are combining various pre-existing theories with the concept. There are various schools of thought around the theory of the business model. According to Teece [12] business model "reflects management's hypothesis about what customers want and how an enterprise can best meet those needs and get paid for doing so". At the same time, Chesbrough and Rosenbloom [13], mentioned that "the function of a business model is to 'articulate' the value proposition, select the appropriate technology and features, identify target market segments, define the structure of the value chain, and estimate the cost structure and profit potential". When it comes to CBM, which has been recently popularizing and still has ample opportunities to flourish, many of the authors mentioned that their contribution by developing frameworks and circular and sustainable business model innovation enriching BMT and its derivatives (i.e., sustainability-related business model) [14–16]. Hofmann et al. [17] mentioned that the business model itself is a central theoretical construct that exceeds more than just a vogue expression, which is also agreed by Joyce and Paquin [18]. Lewandowski [19] considered the circular economy concept as a contributor to the development of BMT. Authors who developed various tools (in the form of canvas) and frameworks mentioned that they directly contributed to BMT, such as Daou et al. [20]. Pollard et al. [21] mentioned that they contributed to the circular economy business model canvas theory and practice by developing a canvas focusing on the electrical and electronic sectors. Okorie et al. [22] also mentioned that CBM is a theory, and a firm can be considered a "bundle of value" when seen from the resource-based theory lens. The BMC components were considered the basis for the CBM theory. On the other hand, Nußholz [23] expressed skepticism around integrating resource efficiency within CBM as an implementable theory, which is left for future research consideration. There are still gaps in understanding and theoretical development about what makes a business "circular".

Specifically, stakeholder theory is being applied by researchers in CBMI-related aspects. For risk assessment and management and triple bottom line perspectives by Wit and Pylak [24], for SBM (synergies in value creation) and strategic sustainability aligned with stakeholder interests by Kurucz et al. [25]. However, in developing the "Strongly Sustainable Business Model Canvas", Kurucz, Colbert, Luedeke-Freund, Upward and Willard [25], have not mentioned or included any specific theory. Bocken [26] integrated stakeholder theory and other concepts such as system thinking, SBM, and value mapping for the conceptual framework development around shared value creation. According to the authors, authentic collaboration with critical stakeholders is optimal for creating shared value by understanding their concerns and requirements. Basile et al. [27] referenced economic, complexity, networks, and stakeholder theories. The author identified that the business model is a standalone theory related to business strategy, innovation management, and economic theory.

Hoveskog et al. [28] highlighted using experiential learning theory (ELT), in which learning occurs through action/reflection and experience/abstraction. Using the theory, the author developed a practical visual collaborative tool within an educational institution environment. Bocken et al. [29] considered the "Lean Startup" approach as a theory that directly links lean startup thinking, triple bottom line value creation (economic, social, and environmental), and the organizational capability of experimentation. Lewandowski [19]

referenced force field theory as a driver for change management (behavioral change among staff) in organizations.

From the social enterprise perspective, Rahdari et al. [30] focused on entrepreneurship theory, considering such entrepreneurship as a social and economic catalyst. The authors mentioned the political theory that deeply explains business–society relationships. The authors also drew attention to corporate citizenship theory defining business and societal relationships. The economic development theory was also highlighted as a critical aspect of business research encompassing innovation, value creation, and changing value systems. The authors argued that Schumpeter's general theory of entrepreneurship [31] clarifies social standpoints on the entrepreneurial processes of such enterprises. The authors included the corporate citizenship theory for their framework (i.e., best practices for agents of change). Brown et al. [32] have referenced entrepreneurship theory integrating decision-making principles into their collaborative circular proposition canvas. They argued that they contributed to theory by integrating effectuation, design thinking, and lean experimentation approaches into the canvas.

It is clear from research by Hernández-Chea et al. [33] that canvas-like business model innovation tools, such as their SBM-IP canvas, contributed to emerging interdisciplinary theory around IP, business model, and sustainability. Here, the business model was considered a standalone theory. By showing the value hill framework, Achterberg et al. [34] mentioned that more insights, both theory and practice, would be gained by connecting CBM with collaborative organizations and potential business logic.

2.4. Canvas and Framework-Based CBMI Tools

Geissdoerfer, Pieroni, Pigosso, and Soufani [2] presented a tool called the "Circular business model tool" that incorporated the value dimension of a business model (e.g., value creation and delivery, value proposition, and value capture) proposed by Bocken et al. [35]. Bocken, Rana, and Short [35] gave the value dimension-related aspects from the perspectives of the sustainable business model (SBM) framework. According to Bocken, Rana, and Short [35], value proposition highlights the questions of "what is provided and to whom", while value creation and delivery construct components around the dimension asking "How value is provided?". "How does the company make money and capture other values?". Furthermore, business models such as CBM and social enterprise were identified as the categories of SBM [36]. From these, it is understood that CBM incorporates R-strategies, resource strategies (in other words, CBM strategies with two distinct variations), CE principles, and SBM framework-based value dimensions. In this connection, using value dimensions as part of business model innovation, Geissdoerfer, Vladimirova, and Evans [36] provided a working definition of "business model innovation (BMI) as the conceptualization and implementation of new business models. This can comprise the development of entirely new business models, the diversification into additional business models, the acquisition of new business models, or the transformation from one business model to another. The transformation can affect the entire business model or individual or a combination of its value proposition, value creation and deliver, value capture elements, the interrelations between the elements, and the value network". In CBMI, various tools and processes are discussed by Bocken et al. [37] such as process/framework, online tool, structured table with questions, cards, conceptual framework with a process, a conceptual tool with steps, canvas tool, screening tool, game, and cards + process. However, the canvas is widely applied among the tools for CBMI and CBM adoption.

Several CBMI tools have been developed by authors in the research field. It is also found that the architecture (i.e., canvas design and development) of the canvases depends on contexts (e.g., targeted industry and organization, background of the researchers). For example, the demand response business model canvas designed by Hamwi, Lizarralde, and Legardeur [16] focused on electricity markets and they are from a technology institute, while the reDesign canvas by Kozlowski et al. [38] focused on the fashion and textile sector and coming from applied science and management background. The number and types

of blocks varied substantially. In the majority of the canvases, however, it is seen that the 9 building blocks (BBs), developed by Osterwalder and Pigneur [3] have been utilized to redesign or redevelop a tailored made BMC for CBM. Many of the studies considered the tradition BMC developed by Osterwalder and Pigneur [3] as the basis for developing the tools. A total of 44 different types of canvas and framework-based business model innovation tools have been reviewed, summarized in Table 1. The brief literature review presented in the table shows that there need to be more CBM-focused canvases that have been developed. In the following Section 2.4.1, the architecture and building blocks of the canvases and frameworks were reviewed in detail.

Table 1. Summary of canvas and framework-based business model innovation tools.

Name of the Canvas	Reference	Country of Origin of the Canvas According to the First Author	Focus
Business model canvas (BMC)	Osterwalder and Pigneur [3]	Switzerland	The "Business Model Canvas" is an adaptable framework for conceptualizing, completing, and evaluating business models.
Lean canvas	Maurya [39]	Nigeria	The lean canvas is the ideal one-page format for generating potential business models; the blocks direct you through logical stages beginning with your customers' problems and ending with your competitive advantage.
Value proposition canvas	Osterwalder and Pigneur [3]	Switzerland	The framework was developed to ensure that the product and market are compatible. It is an instrument for modeling the relationship between consumer segments and value propositions, two components of Osterwalder's business model canvas.
Circular business framework (CBF)	Lauten-Weiss and Ramesohl [40]	Germany	It follows design research methodology (DRM) and structures business ideas.
ECOCANVAS	Daou, Mallat, Chammas, Cerantola, Kayed and Saliba [20]	Lebanon	Tool that highlights unique circular value propositions based on a lifecycle perspective.
Circular collaboration canvas	Brown, Baldassarre, Konietzko, Bocken and Balkenende [32]	The Netherlands	Focuses on design thinking approach to stimulate collaborative ideation of circular propositions.
Circular by design canvas	Ballie and Woods [41]	Scotland	The instrument is intended to assist SMEs in adopting closed-loop systems and identifying the most suitable sustainable design strategies for their business.
reDesign canvas	Kozlowski, Searcy and Bardecki [38]	Canada	The instrument is intended to assist fashion designers in establishing sustainable businesses.
Flourishing business canvas	Hoveskog, Halila, Mattsson, Upward and Karlsson [28]	Canada	A tool for collaborative visual business modeling integrated with the service-learning pedagogic approach.
Strongly sustainable business model canvas	Kurucz, Colbert, Luedeke-Freund, Upward and Willard [25]	Canada	Based on the Framework for Strategic Sustainable Development (FSSD) advancing strategic sustainable organization management.

Table 1. *Cont.*

Name of the Canvas	Reference	Country of Origin of the Canvas According to the First Author	Focus
Demand response business model canvas	Hamwi, Lizarralde and Legardeur [16]	France	Cost-efficient and sustainable power system. The framework helps to understand, integrate, and develop flexible electricity products.
Social enterprise (SE) to sustainability canvas	Rahdari, Sepasi and Moradi [30]	Iran	It is predominantly of interest to socio-economic policymakers and scholars of social entrepreneurship, but it also benefits social and commercial enterprises integrating sustainable development goals.
Sustainable circular business model innovation framework	Maria and Katri [42]	Finland	Recognizing trends and drivers at the ecosystem level, comprehending the value to partners and constituents within a business, and evaluating the impact of sustainability and circularity led to the development of the framework.
Sustainable business model canvas	Schuit et al. [43]	the Netherlands	Experimentation practices and business model experimentation among startups.
Adapted sustainable business model canvas	Bocken, Schuit and Kraaijenhagen [29]	Sweden	It focused on "circular economy" as a driver for sustainability.
Sustainable business model framework	Bocken [26]	The Netherlands	This framework aims to assist businesses in transforming their business models for the creation of shared value, resulting in sustainable business models.
Conceptual framework for business case analysis	Donner et al. [44]	France	Provided an understanding of the CBMs valorizing olive oil waste and by-products.
Sustainable business model canvas for offshore platforms	Basile, Capobianco and Vona [27]	Italy	The instrument provides a holistic perspective of the various multiuse management options and their social and environmental impacts.
Integrated SBM-IP canvas.	Hernández-Chea, Vimalnath, Bocken, Tietze and Eppinger [33]	Sweden	It focuses on innovations in sustainable business models (SBM) as a means of systemically transforming businesses towards sustainability.
Circular and Sustainable business model canvas	Mendoza et al. [45]	United Kingdom	It emphasizes an action-driven, step-by-step approach to developing a business case and putting circular economy thinking into practice.
Back casting and eco-design for the circular economy (BECE) framework	Mendoza et al. [46]	United Kingdom	Focuses on CE thinking and requirements from organizational context.
The circular business model canvas	Okorie, Charnley, Russell, Tiwari and Moreno [22]	United Kingdom	CBM adoption in high value manufacturing (HVM) sector focusing on resource flows, supply chains, and business models and value creation.
Triple bottom line business model canvas (TLBMC)	Joyce and Paquin [18]	Canada	The instrument facilitates the development and communication of a more comprehensive and unified view of a business model.

Table 1. *Cont.*

Name of the Canvas	Reference	Country of Origin of the Canvas According to the First Author	Focus
Circular building components generator" (CBC-generator)	van Stijn and Gruis [47]	The Netherlands	A design tool that aids in the creation of circular structural components.
Framework of the circular business model canvas	Lewandowski [19]	Poland	Designing a CBM and conceptualization of an extended framework for the CBM canvas.
The value hill	Achterberg, Hinfelaar, and Bocken [34]	The Netherlands	It aids in the development of future business strategies for the circular economy.
Business model canvas	The Ellen MacArthur Foundation [48]	United Kingdom	Modifications made in terms of specific questions placed in the building blocks of the traditional BMC.
C3 Business model canvas	Hofmann, Marwede, Nissen and Lang [17]	Germany	To implement the concept of circularity in enterprise architecture at the business level, integrated strategies comprised of factors of sufficiency, consistency, and efficiency are required.
Business cycle canvas	Mentink [49]	The Netherlands	It outlines a process of 18 typical obstacles—or challenges.
Circular business model framework	Nußholz [23]	Sweden	Highlighted the necessity of resource efficiency strategy with circular strategies with an emphasis on product lifecycle management.
Circular business model mapping tool	Nußholz [50]	Sweden	The tool is more focused on reverse supply chain (e.g., product recovery).
The responsible business model canvas (RBMC)	Pepin et al. [51]	Canada	It involves in-depth consideration of the requirements of sustainable development.
Three-dimensional canvas of the sustainable business model with risk components	Wit and Pylak [24]	Poland	It illustrated reverse logistics with a specific focus on stakeholders' perspective.
The smart city business model framework	Giourka, Sanders, Angelakoglou, Pramangioulis, Nikolopoulos, Rakopoulos, Tryferidis and Tzovaras [14]	Greece	The framework facilitates the development and communication of a more integrative and integrated business model for smart cities.
Business model canvas for sustainability	Cardeal, Höse, Ribeiro and Götze [15]	Portugal	The tool provides a procedure and evaluation model that facilitates the design and evaluation of sustainable business models.
The business model canvas (adapted)	Gjøsæter et al. [52]	Norway	Corporate sustainability management and development. It suggests adjustments to a company's resources and capabilities, as well as its strategic and industrial environment and operations.
Creative business model canvas (CBMC)	Carter and Carter [53]	Australia	It demonstrated the value of business planning for a visual artist from the perspective of sustainable business models by incorporating organizational motivations and financial objectives.

Table 1. *Cont.*

Name of the Canvas	Reference	Country of Origin of the Canvas According to the First Author	Focus
Governance, finance, and commercial models (NBS)-based canvas	Egusquiza et al. [54]	Spain	It can evaluate business model components with a focus on urban nature-based solutions (NBS).
Circular economy business model canvas	Pollard, Osmani, Grubnic, Díaz, Grobe, Kaba, Ünlüer and Panchal [21]	United Kingdom	It supports electrical and electronic (E&E) manufacturers in developing circular economy (CE) actions that lead to value proposition, creation, and capture opportunities.
Circular business model tool	Geissdoerfer, Pieroni, Pigosso and Soufani [2]	United Kingdom	CBM related aspects are directly incorporated in the CBM strategies inside the canvas.

2.4.1. Architecture and Building Blocks of the Selected Tools and Frameworks

Business model canvas (BMC), developed by Osterwalder and Pigneur [3] is one of the earlier and most widely used canvas tools applied to various industries. Mature linear businesses, for example, the electrical and electronic sectors, predominately use BMC developed by Osterwalder and Pigneur [3]. The BMC has in total nine building blocks, which are value proposition, key partners, key resources, key activities, customer segment, customer relationship, channels, cost structure, and revenue stream. This canvas is now used by CBM researchers for CBM, mostly without changing its architecture. In addition to the BMC, Osterwalder and Pigneur [3] also developed a value proposition canvas with two fundamental building blocks with three segments, each, including offering—product and services, gain creator, pain reliever and customer—pains, customers job(s), and gain. The canvas applies only to customers and the value proposition of the product/service offering.

Maurya [39] developed a "Lean canvas" with nine BBs, including problem, solution, unique value proposition, unfair advantage, customer segments, channels, key metrics, cost structure, and revenue stream. BMC originally inspired the canvas. Daou, Mallat, Chammas, Cerantola, Kayed and Saliba [20] developed a canvas called "ECOCANVAS" including 12 BBs, namely, (1) need/problem/challenge, (2) customer segment, (3) key resources, (4) circular value chain, (5) foresight and impact (environmental), (6) structure cost, (7) foresight and impact (social), (8) stakeholder relationship, (9) communication and sales, (10) unique circular value proposition, (11) revenue streams and finally (12) CBM and innovation. The BMC and the lean canvas were the source of inspiration. Donner, Radic, Erraach, and El Hadad-Gauthier [44] proposed a "Conceptual framework for business case analysis" with nine BBs. In addition to traditional BMC BBs, the role of institutional context, success factors of CBM, and bioeconomy and CE principles were considered. The framework was inspired by Osterwalder and Pigneur [3]'s BMC, Stål and Corvellec [55], Salvador et al. [56], and Lüdeke-Freund et al. [57]. Basile, Capobianco, and Vona [27] developed a "Sustainable business model canvas for offshore platforms", including 11 BBs. In addition to BMC BBs, eco-social costs and eco-social benefits were added. Eco-social costs and eco-social benefits BBs consist of a series of questions that any business in the sector must address. Inspired by Osterwalder and Pigneur [3]'s BMC. Okorie, Charnley, Russell, Tiwari, and Moreno [22] developed "the circular business model canvas" that has five segments with the BMC BBs. Nontraditional value, traditional value, cost, and other influencing factors enabled by CBM adoption were added to the traditional BMC components. The authors added an extra layer of added factors of influence (FoI) to value dimensions. It was adapted from Osterwalder and Pigneur [3]'s BMC and applied to high-value manufacturing. Lewandowski [19] developed the "Framework of the circular business model canvas", which was redefined in the context of the circular economy using research in the eight sub-domains of CBMs. The triple fit challenge has also been acknowledged as a tool. Same building blocks as the BMC of Osterwalder and Pigneur [3]

with two additional blocks: adoption factors and take-back system (total number of blocks were 11). Gjøsæter, Kyvik, Nesse, and Årethun [52] illustrated "The business model canvas (adapted)" with nine BBs such as traditional BMC applied to ship lines as case studies. Social and environmental lifecycle costs and benefits under the cost structure and revenue streams, respectively, were considered in the canvas. Carter and Carter [53] showed "Creative Business Model Canvas (CBMC)" with 11 BBs in the canvas consisting of your audience, channels, artistic identity, art products, artistic service, communication, cost structure, revenue streams, key resources, key partners, and key activities. A clearer picture of creative arts practice with a focus on value claims that have symbolic dimensions was inspired by the BMC by Osterwalder and Pigneur [3]. Communication, art products, and art services received attention in developing an individual building block.

The Ellen MacArthur Foundation [48] illustrated a "Business model canvas" with nine BBs. The questions in the BBs were tailored and made specifically for CBM. Mentink [49] developed a "Business cycle canvas" that has four BBs. BMC was modified to suit the "Butterfly diagram" of the Ellen MacArthur Foundation (EMF), permitting the alignment of business models throughout the entire supply chain. Whole supply chain perspectives were integrated with the butterfly diagram of the Ellen Macarthur Foundation (EMF) [58].

Schuit, Baldassarre, and Bocken [43] postulated a "sustainable business model canvas" with 12 BBs, specifically applicable to sustainable business model experiments and to advance the transition to SBM. Initially inspired by Bocken [26] and Osterwalder and Pigneur [3] are the BMC. In addition to the traditional BMC, society, environment, and economy are linked with the value proposition. Bocken, Schuit, and Kraaijenhagen [29] proposed an "Adapted sustainable business model canvas" with eleven BBs and four circles encompassing the blocks. Value creation, value proposition, value capture, and value delivery are the core building blocks of the traditional BMC. It was inspired by Richardson [59] and Osterwalder and Pigneur [3] leading to the BMC. With four core segments of value dimensions with subcomponents of the traditional BMC, Hernández-Chea, Vimalnath, Bocken, Tietze, and Eppinger [33] proposed an "Integrated SBM-IP canvas". Intellectual property (IP) aspects are added to the BBs of the canvas inspired by Bocken, Schuit, and Kraaijenhagen [29] and inspired by Bocken, Schuit, and Kraaijenhagen [29] 's SBM canvas, Mendoza, Gallego-Schmid, and Azapagic [45] proposed "Circular and Sustainable Business Model Canvas" with eight BBs, with added value dimensions. It worked as an adoption tool for an action-led, step-by-step methodology. They were applied to higher education institutions. Wit and Pylak [24] developed a "3D canvas of the sustainable business model with risk components" with nine BBs (such as BMC) but with three layers. Internal and external factors of organizational responsibility are divided into (1) economic, (2) social, and (3) environmental dimensions, along with risk assessment and risk management BB. The canvas was adapted from Osterwalder and Pigneur [3]. Cardeal, Höse, Ribeiro, and Götze [15] proposed a "Business Model Canvas for Sustainability" with nine BBs similar to the BMC. However, each building block has three layers (i.e., economic aspects, environmental aspects, and social aspects are the layers). It was adapted from Osterwalder and Pigneur [3]. Maria and Katri [42] proposed a "sustainable circular business model innovation framework" inspired by the BMC, including the thirteen BBs, two levels, one impact criterion; these are business ecosystem level—trends and drivers, stakeholder involvement; business level—key partners (suppliers, service providers, platform owners, reverse logistics partners), key resources, key activities, cost structure, revenue stream, customer relations and collaboration, channels and logistics (direct and reverse), customer and stakeholder identification and understanding. The framework was identified as an excellent way to communicate a business model to stakeholders, including financers and the media.

Pepin, Tremblay, and Audebrand [51] developed "The Responsible Business Model Canvas (RBMC)" which has a total of 14 BBs that consisted of mission, vision and values, negative impacts, positive impacts, governance, users, and beneficiaries in addition to BMC's BBs. Rather than blocks, a framework developed by Mendoza, Sharmina, Gallego-

Schmid, Heyes, and Azapagic [46] named "Backcasting and eco-design for the circular economy (BECE) framework", guides the circular business innovation process in 10 steps considering the iReSOLVE set of actions. Egusquiza, Arana-Bollar, Sopelana, and Babí Almenar [54] developed a "Governance, finance, and commercial models (NBS)-based canvas". The canvas has nine BBs. Governance models are attached to the key partners. Instead of customers, it stated beneficiaries. Financial models include essential resources/investors. More focused on an implementation model at the EU level, specifically for nature-based solution (NBS) projects.

Lauten-Weiss and Ramesohl [40] developed a framework called the circular business framework (CBF), including building blocks such as customers, value case, intangible resources, intangible ecosystem, tangible ecosystem, tangible resources, internal operation, and environment. Each of the building blocks has multiple questions set that are supposed to be answered by an innovator. The framework is associated with a multi-step design process. Pollard, Osmani, Grubnic, Díaz, Grobe, Kaba, Ünlüer, and Panchal [21] proposed a "Circular economy business model canvas" with 9 BBs (the word "circular" added to the BMC BBs). Canvas sub-components are divided into multiple sections and purely focused on electrical and electronic sectors. Geissdoerfer, Pieroni, Pigosso, and Soufani [2] proposed a "Circular business model tool" with 12 BBs. Three columns with value dimensions (value proposition, value creation, and delivery) and value capture). Furthermore, in the rows, CBM strategies (cycling, extending, intensifying, dematerializing). Brown, Baldassarre, Konietzko, Bocken, and Balkenende [32] developed a "Circular Collaboration Canvas" including four BBs. Challenges, resources, customers, and partners. Craft your "circular idea" was placed at the center and specifically designed for circular value proposition as a collaboration design tool for partners/stakeholders. It shows the interrelations between value creation and value proposition. Hoveskog, Halila, Mattsson, Upward, and Karlsson [28] developed "Flourishing Business Canvas" for collaborative visual business modeling. The canvas has four BBs and three layers (environment, society, and economy). Process (e.g., resources, partnership, activities, and governance), value (including value co-creation and value co-destruction), people (i.e., consists of relationships, stakeholders, and channels), and outcomes (having a sub-component of costs, goals, and benefits) were the main BBs.

Ballie and Woods [41] developed "Circular by Design canvas" with five divisions of circularity aspects with four major questions. Bullseye target and arrow-shaped circle are divided into five stages of a circular journey of product/process (e.g., raw materials, manufacturing, retail and distribution, use, and point of disposal). Four main questions related to approach, unique selling point, stakeholders, and behavioral change. It is a reuse-focused canvas. Achterberg, Hinfelaar, and Bocken [34] developed "The value hill", which has four blocks (e.g., circular design, optimal use, value recovery, and network organization), and five R-strategies, two layers: add value and retain value. The placement of activities, stakeholders, and products on a canvas based on a product's lifecycle phase. Several circular designs, supply chains, and business model strategies are available to designers to develop their designs. Hofmann, Marwede, Nissen, and Lang [17] developed "C3 Business model Canvas" that has eight BBs and three layers (business model, stakeholder, biosphere). The central layer consisted of eight building blocks with changes in the block name. For example, in addition to revenue stream, cost structure, key resources, key activities, and value proposition, channels is named circular business network channels, customer relationships is changed to circular business network relationships, and key partners is changed to circular business network. A business model canvas positions: the economic dimension (eight components of the business model canvas) and the social dimension (essential stakeholders) within the ecological dimension (environmental inputs, outputs, and impacts). Nußholz [23] proposed a "Circular business model framework" with nine BBs. Circular strategy is added to the canvas's product/service offer and value proposition, while resource efficiency strategies are integrated with the product/service lifecycle. Nußholz [50] developed the "Circular business model mapping tool", which

has five stepwise building blocks with segmentation of value dimension. The building blocks included 1: collect and reignite (substitution primary materials), 2: first sale (with prolonged use), 3: collect and reignite (organize take-back), 4: additional sale(s) of product or parts, and 5: enable material recovery.

Keeping relational leadership for strategic sustainability in mind, Kurucz, Colbert, Luedeke-Freund, Upward, and Willard [25] developed a strongly sustainable business model canvas, which has twenty-seven BBs, three boundaries, four perspectives, and twenty question blocks. The four perspectives are: (1) process, (2) measurement, (3) stakeholder, (4) product, learning, and development. Value propositions are interconnected with the fourth perspective. Relationships, stakeholders, actors, channels, and needs are associated with the stakeholder perspective. Measurement perspectives included processes, success, costs, revenues, assets, tri-profit, and valuation methods. Process perspective included bio-physical stocks, resources, decisions, activities, partnerships, and ecosystem services. There are three contexts including (1) environment (physical/chemical/biological), (2) society (social/technological), and (3) financial economy (monetary).

With the application of the electric mobility sector, Hamwi, Lizarralde, and Legardeur [16] proposed a demand response business model framework, including nine BBs, such as resource availability, communication channel, flexibility market segments, flexibility product, flexibility mechanism, service attribute, cost structure, revenue model, flexibility resource. Kozlowski, Searcy, and Bardecki [38] developed a practical tool to create and support sustainable fashion innovation for design entrepreneurs, named "reDesign canvas" with 11 BBs including (1) concepts, (2) consumer, (3) (de)branding, (4) circular design and economies, (5) innovative and sustainable business models, (6) design and smart material selection, (7) prototype and product development (PD), (8) revenue streams and costs, (9) data management, (10) sourcing, and finally (11) sustainable supply chain (SSC).

Joyce and Paquin [18] developed the "Triple bottom line business model canvas (TLBMC)" that has nine building blocks in each layer (in total, there are three layers). BBs are from BMC of Osterwalder and Pigneur [3]. The economic layer has the same building blocks as the BMC of Osterwalder and Pigneur [3]. The social layer has building blocks of local communities, governance, employees, social value, societal culture, scale of outreach, end-user, social impacts, and social benefits. The environmental layer has the building blocks of suppliers and out-sourcing, production, materials, functional value, end of life, distribution, use phase, environmental impacts, and environmental benefits.

Van Stijn and Gruis [47] developed the "Circular building components generator" (CBC-generator)" by systematic "mixing and matching". The step-wide circular building inventory matrix consists of building, building components, sub-components, parts, and materials. Some of the critical components stated are lower material costs, long-term client relationships, customization options, sales, and marketing channels, a cyber-physical system for the product return, new + large customer segment, sale with a deposit, lease/pay-per-use, sale+ take-back guarantee. The canvas integrated a three-tiered design tool consisting of a technical, industrial, and business model generator. Giourka, Sanders, Angelakoglou, Pramangioulis, Nikolopoulos, Rakopoulos, Tryferidis, and Tzovaras [14] proposed "The Smart city business model framework" with 14 BBs. In addition to BMC BBs, (1) data, (2) key actors' offerings, (3) key actors' co-creation operations, (4) environmental impacts: costs and benefits, and (5) social impacts: values and costs. Channels are named deployment channels. BBs are adapted from business model canvas (BMC) and applied to business model development and smart city innovation.

Rahdari, Sepasi, and Moradi [30] illustrated "Social enterprise (SE) to sustainability canvas", including four BBs (e.g., corporate citizenship, agent, level, corporate social sustainability, social enterprise) divided into multiple sub-blocks. Multiple hexagonal building blocks are mainly associated with micro-level sustainable development goals (SDGs), macro-level SDGs, maturity, and level of integration.

It is clear from the article that there is a need for developing a BMC specifically for CBM, which reflects the circular principles, strategies, and inclusion of archetypes and

typology of CBM. Thus, in a new canvas, these blocks, along with the appropriate addition of others identified as deemed necessary to qualify as a canvas for CBM.

2.4.2. Sustainability and Circularity Aspects in CBM

Sustainability and environmental, social, and governance (ESG) reporting are also becoming critical components of business operation, and future circular businesses would investigate these matters, specially targeted sustainable development goals (SDGs) and ESG reporting requirements when operating independently or as supply chain partner in a circular supply chain environment. This necessity has already been understood. Fatimah et al. [60] recently proposed a feature-based circular economy e-business model for uplifting ESG and sustainability performance. The relationship between ESG and SDGs concerning CBM is scarcely investigated except few studies such as Das et al. [61], Gamidullaeva et al. [62], and Corral-Marfil et al. [63].

Various authors partially considered the aspects in their respective canvases regarding sustainability and circularity-related aspects. Table 2 provides a summary of the studies. To some extent, issues such as circular design, CE principles, CE analytics, circular value chain, unique circular value proposition, circular design, circular strategies, circularity evaluation, CE vision at the organizational level, circular business network, product lifecycle management for circular value proposition were found in individual studies, not all in one place. Sustainability-related aspects are placed more from a triple bottom line perspective (e.g., social, economic, and environmental) at individual building block (BB) levels and with a separate block in canvases.

Table 2. Sustainability and circularity aspects highlighted in the business model canvas.

Name of the Canvas	Reference	Sustainability-Related Aspects	Circularity Related Aspects
Circular business framework (CBF)	Lauten-Weiss and Ramesohl [40]	Environment	Three CE principles, circular design, CE analytics.
ECOCANVAS	Daou, Mallat, Chammas, Cerantola, Kayed and Saliba [20]	Environmental and social foresight and impact	CBM and innovation, circular value chain, unique circular value proposition.
Circular collaboration canvas	Brown, Baldassarre, Konietzko, Bocken and Balkenende [32]	-	Partner identification for circular value proposition design.
Circular by design canvas	Ballie and Woods [41]	-	Circular design, product/process lifecycle-specific.
reDesign canvas	Kozlowski, Searcy and Bardecki [38]	Supply chain and business model perspectives	Circular strategies (slowing the loop, closing the resource loops, and narrowing resource loop), circular cycles.
Flourishing business canvas	Hoveskog, Halila, Mattsson, Upward and Karlsson [28]	In the environment layer in the canvas, the canvas has two main components: biophysical stocks and ecosystem service, while ecosystem actors, and needs are overlayed in the three layers concurrently.	-
Strongly sustainable business model canvas'	Kurucz, Colbert, Luedeke-Freund, Upward and Willard [25]	Triple bottom line contexts included	-
Social enterprise (SE) to sustainability canvas	Rahdari, Sepasi and Moradi [30]	Sustainable development, sustainable and responsible products/service, operation/processes, attitudes, and sustainable responsible business model	-
Sustainable circular business model innovation framework	Maria and Katri [42]	Sustainability requirements, sustainability benefits	Circularity evaluation.

Table 2. *Cont.*

Name of the Canvas	Reference	Sustainability-Related Aspects	Circularity Related Aspects
Sustainable business model canvas	Schuit, Baldassarre and Bocken [43]	Sustainable business model (SBM)	-
Adapted sustainable business model canvas	Bocken, Schuit and Kraaijenhagen [29]	Value as the main essence that separates the conventional business model and SBM	-
Conceptual framework for business case analysis	Donner, Radic, Erraach and El Hadad-Gauthier [44]	-	CE principles, and business models.
Sustainable business model canvas for offshore platforms	Basile, Capobianco and Vona [27]	SBM, eco-social aspects of business model	-
Circular and sustainable business model canvas	Mendoza, Gallego-Schmid and Azapagic [45]	Value proposition building block integrating economic, social and environmental sustainability	Integration of circular campus.
Back casting and eco-design for the circular economy (BECE) framework	Mendoza, Sharmina, Gallego-Schmid, Heyes and Azapagic [46]	Environmental impacts, eco-design indicators, lifecycle assessment	CE vision, strategies, and scenarios.
The circular business model canvas	Okorie, Charnley, Russell, Tiwari and Moreno [22]	Economic value, social responsibility, environmental value	-
Triple bottom line business model canvas (TLBMC)	Joyce and Paquin [18]	Representing triple bottom line for various building blocks in economic, social and environment dimensions.	-
Circular building components generator" (CBC-generator)	Van Stijn and Gruis [47]	Greener products	Circular design, circular building component (CBC)-generator.
Framework of the circular business model canvas	Lewandowski [19]	PEST factors including social and environmental aspects of business model	Take-back systems.
The value hill	Achterberg, Hinfelaar, and Bocken [34]	Five R-strategies: repair/maintain, reuse/redistribute, refurbish, remanufacture, recycle.	Yes. Covered mainly CE principle: P2 with specific focus on circular materials as part of the P1.
Business model canvas	The Ellen MacArthur Foundation [48]	-	In all aspects, specifically, in key partnerships, key resources.
C3 business model canvas	Hofmann, Marwede, Nissen and Lang [17]	Biosphere as an environmental/ecological aspect with ecological cost as part of cost structure. Stakeholder as social dimension, and circular business model as economic dimension. Social component was highlighted in the VP as social affiliation.	Mostly focused on circular business network-oriented narrative. Circular added value-based business model design.
Business cycle canvas	Mentink [49]	-	CBMI, circular supply chain.
Circular business model framework	Nußholz [23]	Resource efficiency strategies	Business model canvas that incorporates lifecycle value management systematically: the nine building blocks of the business model canvas are offset to three circular lifecycle points (resource recovery, prolong lifespan, and end-of-life).
Circular business model mapping tool	Nußholz [50]	Value dimensions from SBM framework of Schuit, Baldassarre and Bocken [43].	Product lifecycle perspectives and resource strategies.
The responsible business model canvas (RBMC)	Pepin, Tremblay and Audebrand [51]	Impacts areas are focused on triple bottom lines	-
3D canvas of the sustainable business model with risk components	Wit and Pylak [24]	Economic, social, and environmental responsibility	-

Table 2. *Cont.*

Name of the Canvas	Reference	Sustainability-Related Aspects	Circularity Related Aspects
The smart city business model framework	Giourka, Sanders, Angelakoglou, Pramangioulis, Nikolopoulos, Rakopoulos, Tryferidis and Tzovaras [14]	Sustainable value creation	-
Business model canvas for sustainability	Cardeal, Höse, Ribeiro and Götze [15]	Sustainability assessment, lifecycle costing, lifecycle assessment	-
The business model canvas (adapted)	Gjøsæter, Kyvik, Nesse and Årethun [52]	Corporate sustainability management	-
Creative business model canvas (CBMC)	Carter and Carter [53]	Focused on social enterprise organizations	-
Governance, finance, and commercial models (NBS)-based canvas	Egusquiza, Arana-Bollar, Sopelana and Babí Almenar [54]	Integration of sustainable business model (SBM) approach and market-shaping techniques.	-
Circular economy business model canvas	Pollard, Osmani, Grubnic, Díaz, Grobe, Kaba, Ünlüer and Panchal [21]	Corporate social responsibility, eco-design	Logistics and distribution, skills, and training.
Circular business model tool	Geissdoerfer, Pieroni, Pigosso and Soufani [2]	-	CBM strategies such as cycling, extending, intensifying, and dematerializing.

2.5. Social Enterprise and CBM

Smitskikh et al. [64] argued that social enterprises have a significant role in the transition to a circular economy, as their primary mission is to achieve socially significant goals and create higher added value for society while reducing negative environmental impact. Staicu [65] named social enterprises as sustainability-oriented innovators, and the enterprises are transitioning to a circular economy through incremental and transformational innovation. According to the authors, such enterprises work towards environmental and social sustainability in their core business activities. Jabłoński and Jabłoński [66] identified that social enterprise predominately contributes to community and society at the same time, and generates profits typically invested in the business itself. Using the example of water supply companies, the authors argued that social enterprises traditionally have holistic consideration of the impact of business activities on the environment and society while maintaining economic viability. The authors identified trust as increasingly important in developing business models that balance economic, environmental, and social issues. Social enterprises generally create a physical space to interact, and products are made from upcycled materials [67]. El Chaarani and Raimi [68] found that the success of social entrepreneurship is related to the prior experience of social entrepreneurs. Previous experience in the labor market, prior entrepreneurship projects, interaction with customers, and making decisions after defining a global vision are significant factors that increase social entrepreneurs' success.

Among the studies, some of the studies focused on the fashion and textile sectors. For instance, highlighting the sector as a case study, Real et al. [69] showed that social enterprises generally re-value local resources and participate in (social) business model innovation. The authors mentioned that the active participation of local stakeholders, the quality of the products manufactured, circular-oriented services, the structure of supply networks, the speed of flows into the value constellation, and the proximity with customers were the key factors that made the circular business within the social enterprise context to be mature and successful. Regarding the dynamic, grounded model, Costanza [70] illustrated that social enterprise has the characteristics of the commercial circular business and features around social missions. Highlighting the clothing recycling sector, the authors identified that education is the single most critical factor for social enterprise communicating product's social and environmental values. In terms of challenges, Staicu [65] identified that a social

enterprise working in the clothing sector faces several of them, such as (1) significant value-chain changes in both production and consumption patterns, (2) lack of circular business strategies for adoption, (3) policies, (4) inclusion of CE principles in business model, (5) lack of holistic understanding about health and environmental impacts of the waste stream of a sector. Another study by Staicu and Pop [67] found that poor interactions among the stakeholders determined a weak circular ecosystem applied to the textile and apparel sector. Real, Lizarralde, and Tyl [69] highlighted the cosmopolitan localism perspective that emphasizes the importance of interconnected localities where decisions are made locally by the people directly concerned and where much of the decision-making, know-how, and economic value remains in the hands, minds, and pockets of the local communities. El Chaarani and Raimi [68] suggested that environmental factors such as financial support, government policy, culture and social norms, and business and professional infrastructural services are necessary for the success of social entrepreneurship and the creation of successful startups by entrepreneurs.

As mentioned earlier, a minimal number of studies are found on social enterprise work with the concept and strategies around CBM. Smitskikh, Titova, and Shumik [64] found that waste reduction, reuse, and recycling, as well as the use of renewable energy sources and the design of products and services that are sustainable and environmentally friendly, were identified as some of the circular economy principles implemented by social enterprises. Similar evidence was found by Chineme et al. [71], who mentioned that key circular economy-related strategies were included, such as waste as a resource, facilitating collaboration and cultural appreciation through co-production, incorporating the self-organization skills of a minority group, and using a simple waste management technique generating value from black soldier fly larvae for fish and animal feed production.

2.6. Australian Context of CBM

There need to be more studies performed focusing on CBM, specifically business innovation tool development focusing on CBM and the tool analyzing (circular) business. Maher et al. [72] recently presented three case studies in Australia in the textiles, organics, and construction sectors. The authors used traditional BMC and value proposition canvas to analyze the case studies. In their analysis, the authors took the approach of analyzing the case studies with CBM innovation types (e.g., closed-loop supply chains, product–service system, waste valorization, and others), 5R hierarchy (material use) strategy and resource focus for circularity (i.e., specific material types such as packaging, textile production, and others). Piller [73] examined the practice of Australian SMEs with CBMs around the fashion sector, focusing on product stewardship (PS) and circularity. Three in-depth interviews and a focus group discussion were conducted in the study.

Previously, Roos [74] explored the development and implementation of business models for circular value chains, with a particular emphasis on green business models and addressing social dilemmas within this context. However, a case study has yet to be presented in this study. Considering 10 European platform organizations, Blackburn et al. [75] investigated the orchestration mechanisms used by platform-based meta-organizations facilitating economic value creation within the CBM context. However, no case study analysis has been performed, taking the Australian example in the study. Sohal and De Vass [76] highlighted the success stories of Australian small and medium-sized enterprises (SMEs) in transitioning to the circular economy (CE), emphasizing the importance of leaders' vision, alignment with the 3R concepts (reduce, reuse, recycle), critical internal factors such as leadership's passion and finding practical solutions, and the key external factor of collaboration through public, private, and academic partnerships.

Considering various organizations from Australia working in waste management, food packing, multinational companies, and warehouse and logistics service providers, Perey et al. [77] identified how good business organizations have transformed their business models by reframing waste as a valuable resource and implementing circular flows, leading to changes in their understanding of waste in the value chain and initiating negotiations

with suppliers to modify supply chain practices for sustainability. Fleischmann [78] applied design-led innovation for CE initiatives from the context of regional Queensland, focusing on the business model transformation process and targeting waste managers in local councils. Daljit Singh et al. [79] conducted a lifecycle assessment and mentioned that CBM could be implemented using the concept of a longer product lifecycle. Ratnasabapathy et al. [80] investigated construction and demolition (C&D) waste management (WM) in Australia and suggested that businesses need to be engaged to develop CBM.

From these studies, it is easily identifiable that except for the study of Maher, Yarnold, and Pushpamali [72], the studies have yet to focus on the BMI tool, such as BMC applying it to analyze CBM in the Australian context. This study is one of the first kinds in the Australian context that developed a canvas focusing on CBM and applied for validation to understand its applicability in investigating CBM-oriented business.

3. Circular Business Model Value Dimension Canvas—Development and Characterization of Building Blocks

The canvas developed in this research is named "Circular business model value dimension canvas". The primary basis of the canvas is the canvas developed by Osterwalder and Pigneur [3], with substantial modifications and the addition of the blocks from previously developed canvases. In addition, the value dimension by Bocken, Rana, and Short [35] has been considered, segmenting BBs into three dimensions. Adding these value dimensions into the canvas architecture also incorporates the SBM framework. In addition, previously designed canvas BBs are incorporated into the redesign process to make the design more robust and applicable, specifically for CBM. The canvas is divided into four rows. The row is associated with the "Circular goal and scope definition" and "Sustainability mission and action". Rather than going into deep scrutiny, sustainability aspects are more focused on the company's vision of achieving SDGs. The sustainability aspects are integrated with a block called "Benefits and burden (customer, society, and environment)" in the value proposition segment of the canvas.

This block is divided into circular goals and scope definition and sustainability mission and action. For the first one, the business or company will express their vision towards which principles of CE they want to achieve. The first two are related to technical cycles, as presented in the butterfly diagram. Principles are to be selected depending on the operation of a business or the intention to work on a specific product–service system. This mentions explicitly the other point on mission and action, in which operating cycle/s the organization is working or intending to work—technical or biological cycle. The distinction of business operation in the operating cycle is one of the critical issues. CE strategies or R-strategies proposed by Potting, Hekkert, Worrell, and Hanemaaijer [7] have been added to this block to define a business's target achieving specific CE strategies. Such a notion was utilized as part of the strategy setting for simplicity. Kozlowski, Searcy, and Bardecki [38] also used circular strategies for their redesign canvas.

Under the value creation and delivery segment of the canvas, there are a total of nine core building blocks, including (1) essential partners/stakeholders, involvement, relationship, and governance, (2) essential resources, (3) key activities (internal business), (4) key metrics, CE analytics, and data management, (5) circular design by adding value or retaining value, (6) risk assessment and management, (7) networks and organizations, (8) (tangible and intangible) ecosystem level activities, (9) channels—divided into three segments such as communication, recovery, and distribution.

Under the value proposition segment, there are a total of eight building blocks present, namely (1) customer relationship and collaboration, (2) concept for an unfair advantage, (3) unique circular value proposition, (4) need/problem/challenges, (5) targeted solution, (6) characteristics of product/service/features/performance and (7) customer/users/beneficiaries' segments and (8) benefits and burden (customer, society, and environment).

Cost structure and revenue stream are the two basic building blocks that come under the value capture segment of the canvas. These building blocks are directly adapted from Osterwalder and Pigneur [3].

This literature review and architecture of the previously developed canvases (reviewed in Sections 2.4 and 2.4.1) constructed the basis for developing a new canvas for CBM, which is attempted in this study. The questions created the basis of a semi-structured interview for the study. With the table presented here, future researchers can also identify further opportunities in the research area. Based on the architecture of the previously developed CBMI tools, the origin of each of the building blocks is presented in Table A1 in Appendix A. A description of each building block of the canvas is explained in Table A2, and the relevant questions under each block of the canvas are presented in Table A3, Appendix A of this article. The final design of the canvas is shown in Figure 1.

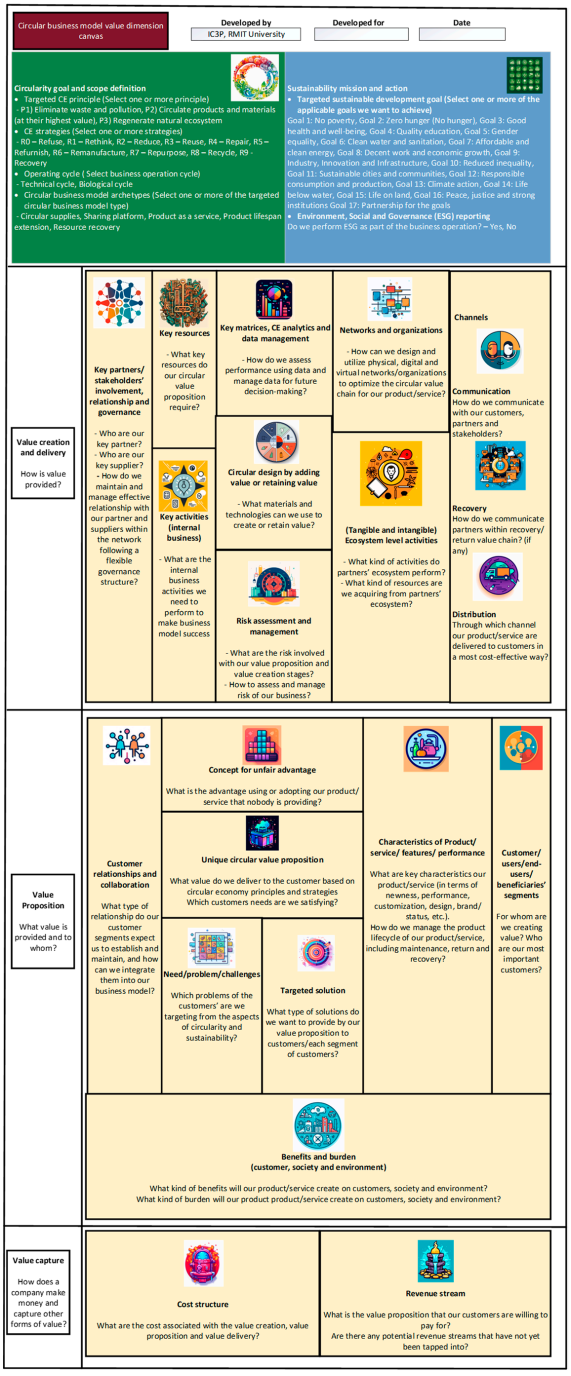

Figure 1. Circular business model value dimension canvas (Source: authors' own development).

The steps of using the canvas by organizations could vary substantially. However, it is understood that value proposition is the single most crucial aspect that any business considers in the first place. In that case, building blocks associated with the value proposition segments should be targeted first. Furthermore, in the segment, needs/problems/challenges and targeted solutions should be identified at the beginning to have a successful and unique circular value proposition and identify unfair advantages. When issues such as "whom the value proposition is designed for" and "what are the main characteristics of the product/service" are assessed by critically scrutinizing customers and features-related aspects in the segment, a circular value proposition is expected to be developed. When combining all the aspects (i.e., problems, solutions, customers, product features, and others), a business could easily track its contribution to the "greater good" and impact (i.e., benefits and burden to customers, society, and the environment). Furthermore, value creation and delivery segments involve a critical assessment of existing essential resources and activities required to create such a circular value proposition and the expenditure involved with the channels. Thus, the value capture segment of the canvas critically connected two of the other segments (i.e., value creation and delivery and value proposition). Businesses will not create a value proposition unless it is economically viable. A suggested sequence of using canvas could be (1) value proposition > (2) value creation and delivery along with constant critical observations of the (3) value capture segment components. Based on the pin-point assessment of the core components at the segments, users (e.g., business/organization/individual) can complete the circularity goal and scope definition and sustainability mission and action box. These boxes can also be completed at the beginning if the user is certain and has substantial knowledge and awareness about various aspects of circularity and the definition and coverage of SDGs.

4. Methodology

This study is predominantly qualitative research in which semi-structured questions guiding each building block of the canvas have been used. The questions are also given in Table A3 in Appendix A. This provided an opportunity to understand the dynamics and critical consideration that has been put into designing a hybrid business model. This study was conducted using a single case study approach which was performed in earlier studies undertaken by Daou, Mallat, Chammas, Cerantola, Kayed, and Saliba [20]—wine industry [18]—Nespresso example, Maria and Katri [42]—social enterprise using reuse strategy of consumer goods, Donner, Radic, Erraach and El Hadad-Gauthier [44]—olive oil waste and by-product valorization. According to Yin [81] "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the object of study and context are not evident". It is a realistic approach as in a single paper; describing a redesigned canvas and validating it with multiple case studies would make a research paper lengthier and more complex. Accepting such limitations of a single case study, this paper takes this approach to a business working as a social enterprise. The interview process was conducted via an MS Teams meeting comprising approximately an hour with the company chief executive officer (CEO). The CEO has been working in the social enterprise sector for many years. An online Miro board was developed that was shared with the participant at the time of the interview, where the participant (e.g., the CEO) was given a choice to write individual elements as per the prompt questions mentioned under each block of the Miro business canvas. The interview was then transcribed in addition to analyzing components identified under each building block on the canvas.

The justification of including a circular business (here, in this case, a social enterprise) in the validation process provides an opportunity to test the applicability of the canvas using new circular businesses in the future. Nevertheless, the canvas could also be applied to other types of business. It serves to realize the academic level and empirical testing of the institution or an organization focusing on CBM. The case study company implemented a hybrid strategy for their business model incorporating the core concept of resource

recovery, sharing platform, and product lifespan extension CBM archetypes. As per the ethics approval requirements, the business's name is "Company X". Company X is the largest second-hand refurbished bike retailer in Melbourne, Australia (operating for the last 27 years), working as a not-for-profit. Reducing the number of bikes going into landfills, providing experience to the disabled young population to explore employment skills, and making refurbished bikes affordable are some of the company's mottos. The reasons for selecting this specific enterprise were that: (1) previously, such hybrid-type CBM businesses have not been investigated within the Australian context focusing specifically from the perspective of CBM (as seen in Section 2.6), and (2) the diversity of the activities and business model design process and elements provided a deep understanding of a business model when it included social and environmental aspects.

5. Results

5.1. Company X—Social Enterprise (Hybrid CBM—Resource Recovery, Sharing Platform and Product Lifespan Extension)

The company CEO is aware of the R-strategies and principles of CE and understands the operational business area in the technical cycle. This inferred that the company CEO has substantial knowledge of the definitions and understanding of the Ellen MacArthur Foundation (EMF)'s, CE butterfly diagram. In terms of SDGs that align with the business operations, this was not explicitly stated at the beginning of the business model development, however, when this was illustrated and explained by the researchers, the CEO quickly identified the associated SDGs that correspond to the enterprise's objective and mission. The CEO has extensive experience operating charity and social enterprises in other sectors which helped to devise various strategies around partner selection, revenue model, assessing resource requirements, and supply chain bottlenecks. During the interview with the co-founder, it was understood that the way the business canvas's building block had been organized was not seen as the way the company initially started its business model design process. Previous experience working in social enterprises provided the business CEO the opportunity to design a reuse and refurbish-oriented hybrid CBM. As the concept of circular economy and CBM as a whole are relatively new concepts among businesses, it was also understood that at the time of the interview, the company was still in the process of labeling its business model as a CBM. It is obvious that many of the businesses operating in various parts of the world that are operating for many years incorporating CE principles and strategies are now being understood when categorizing a specific type of CBM. This was also the case of the company investigated, here in this study. Details of the identified elements under each of the building blocks of the canvas focusing on the business are explained in the next section.

5.2. Circularity and Sustainability at Company X

Under CE principles, the company identified that P1 and P2 are the two main principles that they are encompassing and targeting. Among the R-strategies, the CEO selected multiple strategies that directly incorporated the business operation as well as creating a unique value proposition for the market. It seemed the CEO is knowledgeable about R-strategies very well. "R1—Rethink" was selected as part of the building block elements as the company CEO believed that it corresponds with consumers' behavioral change-related aspects which is one of the core aspects around second-hand bikes. The company sees "R2—Reduce" as part of the broader strategy as it is diverting large numbers of unused/unwanted bikes from going into landfills. When it comes to material reuse (i.e., the bike itself), R3—Reuse the parts and components is a central part of the value creation, which also incorporates the "R4—Repair" strategy as most of the bikes need substantial repair which is performed by the marginalized population, the people with special needs. The CEO identified that there are some bikes collected at the collection points, which need to follow the "R5—Refurnish" strategy. The business is identified as hybrid CBM because, the CEO believes that their operation encompasses the "resource recovery",

sharing platform" and "product lifespan extension" CBM types. By recovering used and unwanted bikes from both waste transfer stations as well as at dedicated collection points, they established "resource recovery" CBM. They created shared physical spaces where consumers can donate their used bikes that touched the sharing platform which eventually generates revenue for the business by direct-selling or with some refurbishment (connecting sharing platform). By using available spare parts within the influx of unwanted bikes and with new components, and repairing, they extend the product lifespan of bikes that would otherwise end up in landfill.

The company specifically identified the following SDGs that align with their hybrid CBM, which are: Goal 3: Good health and well-being, Goal 4: Quality education, Goal 5: Gender equality, Goal 8: Decent work and economic growth, Goal 9: Industry, innovation, and infrastructure, Goal 10: Reduced inequality, Goal 11: Sustainable cities and communities, Goal 12: Responsible consumption and production, Goal 13: Climate action and Goal 17: Partnership for the goals. The company's philosophy is underpinned by bikes being one of the healthiest ways for individual and community well-being (aligning with SDGs 3 and 11). Providing training to trainees (mostly young segment of the population with special needs, and their subsequent employment was related to SDGs f 4, 8, 10. By partnering with resource recovery companies and new bike retailers, transport vehicle partners, it is creating new industrial solutions and innovation and most importantly successful material circularity around secondhand/unwanted bikes that are otherwise sent to landfills (aligning with the SDGs 9, 13, and 17). The company specifically targets changing consumer behavior and considers low-income marginalized populations as the niche customer segment for their business that is directly aligned with SDGs 5, 10, and 12. Currently, the company does not have a reporting mechanism to address environmental, social, and governance (ESG) issues. According to the company CEO, there is an opportunity to grow the company to a large business with expansion into several states in Australia. The company would then consider incorporating ESG reporting as part of the reporting mechanism. The need and portfolio-based approach has been successfully applied to e-business by Fatimah, Kannan, Govindan, and Hasibuan [60] and can also be applied in the future with regard to ESG for social enterprise as CBM.

5.3. Value Creation and Delivery

5.3.1. Key Partners/Stakeholders' Involvement, Relationship, and Governance

The company collaborates with various entities to facilitate the collection of used bicycles and resource recovery initiatives. They have formed partnerships with a new bike retailer and a new car dealer who function as used bike collection points. Local government councils are essential to the company's resource recovery efforts and marketing and communication initiatives. Moreover, collaborations with private waste/hard rubbish collectors and council-owned local transfer locations enable the recovery of used bicycles. The company CEO stated that "*. . . so Company A (a company mentioned during interview, name omitted due to confidentiality) is the biggest waste management company in Melbourne. . . so we partnered with them*". To guarantee proper disposal, Company X collaborates with metal recyclers for disassembled parts and a specialized tire recycling company. Additionally, the company actively participates in a disability employment program, offering training opportunities. He mentioned that "*. . . using the Disability Employment scheme to help train the trainees*". These partnerships and stakeholder participation demonstrate the company's dedication to sustainability, resource recovery, and social good.

5.3.2. Key Resources

Several resources are utilized to support the company's initiatives. They collaborate with mechanics from a new bicycle retailer who assists with testing and quality control of used bicycles. The physical store functions as a hub for its operations and interactions with customers. The CEO mentioned that "*. . . so property the fact that we have a warehouse and a van to a property or assets through human resources*". In addition, they have established

an extensive network of resource recovery businesses and disposal locations to ensure the appropriate disposal of used bicycles. A brand-new car dealership provides a van for transportation, and volunteer chauffeurs assist with logistics. A trainer is provided by the council, and benefactors have contributed equipment to support their operations. The CEO mentioned that "*. . . through to all the tools that we have for the mechanics*". The company's physical resources include a facility for storage and operations. The company has implemented a stock and sales system to manage its inventory, and human resources play a crucial role. He mentioned that "*. . . through to systems so the point of sale system and the stock system together is critical*". Moreover, the design and presentation of the bicycles, as well as their brand value, contribute to the overall success of the company. In this regard, he mentioned that "*. . . I suppose it's the brand as well. so, I think we've quoted really strong brand*". Through the sale of used bicycles, the company can effectively carry out its mission of promoting sustainability and resource recovery thanks to these vital assets.

5.3.3. Key Activities (Internal Business)

To support its mission and assure operational efficiency, the company engages in a variety of activities. The company CEO stated that "*. . . Well, is it is everything that a retail business would do. So, we look at supply or supply management, stock management. . .processing so there that we have a whole system around*". The establishment of a dedicated transfer station for the accumulation of used bicycles has streamlined the process of inventory acquisition. Collaboration with corporations and other businesses for product return and resource recovery improves their supply chain. The company conducts economic viability evaluations, evaluating the input–output relationship and making effective use of available resources. They also establish alliances with recyclers to maximize material utilization. Key activities to support the development of young people engaged in their operations include establishing trust and acquiring foundation grants. The organization maintains a comprehensive database that includes information on families, funding, fundraising, inventory, sales, and supply management systems, among others. Physical presence is essential for retaining customers, whereas decentralized collection points, retailer integration, and external partnerships are potential strategies for increasing market share and customer base. They evaluate their pricing policy to guarantee competitiveness and prioritize refurbishment based on job orders. The CEO mentioned that "*. . . there's job order that would be completed by Mechanic, then tested and then being put out on the shop floor to pricing policy and review of our pricing*". Their efforts in marketing and communication are crucial to promoting their products and brand. Overall, the company's activities resemble those of a retailer or manufacturer, but with a strong emphasis on sustainability and resource recovery.

5.3.4. Key Matrices, CE Analytics, and Data Management

Using a variety of metrics, the company closely monitors and measures the impact of its operations. The CEO mentioned that "*. . . we have a spreadsheet . . . for the charity side too, manage families and supporters in terms of our funding, our fundraising*". The number of employment opportunities created for young disabled individuals is a key metric that demonstrates their commitment to social impact. In addition, they monitor the number of repaired and resold bicycles, which provides insight into their contribution to overall resource conservation. To effectively manage their data, the business maintains a spreadsheet containing stock and sales-related data. This consists of information regarding the weekly influx of bicycles, the number of debris generated from disassembly, the number of refurbishments performed, and the frequency with which bicycles reach the retail floor. By meticulously monitoring and analyzing these key matrices, the company can make well-informed decisions and continuously enhance its circular economy initiatives. However, while the company currently, employs spreadsheets for data management, it also recognizes the need to engage a data analytics system to evaluate indicators such as heat maps of activities, resource value, product acquisition, and supply chain-specific

quantitative data. He mentioned that "*. . . So we came, we not big enough or don't have enough resources to have a proper database system unfortunately*".

5.3.5. Circular Design by Adding Value or Retain Value

The company highlighted its commitment to circular design by adding value to its operations and retaining value. To maintain the value of their products, they stressed the significance of employing disabled individuals and a repair-related workforce. They can assure intensive repair and stringent quality control by employing skilled labor, thereby extending the lifespan of their products. Regarding the traditional cheap bikes, he mentioned that "*. . . they're not designed to last very long*". To increase efficiency, the company seeks to minimize the use of new spare parts by reusing parts from other bikes. The CEO mentioned that "*. . . and of course, everything else like spare parts, we take the spare parts off other bikes for spare parts for fixing the bikes. So, we try to minimize the new spare parts that we need to buy*". Moreover, they emphasized the importance of tangible tools and maintenance equipment in facilitating these circular design practices. These essential components contribute to their overarching strategy of maximizing value and sustainability throughout the product's lifecycle.

5.3.6. Risk Assessment and Management

Company X acknowledged the significance of risk assessment and management during the interview. They identified several significant threats to their business. The company has identified supply chain risks, quality risks, and the risk of trainees departing midway through the training process as its core risk components. The CEO mentioned that "*. . . so I said one risk is supply. . . So, all the quality of the supplying quality and quantity of supply, we can't control that. So, we don't know how many you know bits individually are gonna be put into waste or simply be collected through the other the other channels*". The CEO also mentioned that "*. . . and the biggest risk for us is inadequate sales. So, at the moment we're not selling enough used bikes to make this thing viable . . . So, we do have to look at other retail opportunities. So, I suppose the risk around financial sustainability of this venture is massive and . . . so that's one risk is the trainees . . . for whatever reason, not completing the program and getting into mainstream employment again, we can't control a lot of that because things happen in their lives outside of what we do here*".

More specifically, the risks identified by Company X were as follows:

- There is a lack of awareness and culture regarding the value of waste, which may present difficulties when attempting to attract consumers.
- The company confronts unbalanced competition from retailers that sell cheaper bicycles.
- In addition, they emphasized the need for an unpredictably continuous supply of economically viable inputs, such as used bicycles.
- Furthermore, the cost of repairing bicycles sourced from diverse channels and the difficulty of regulating the supply chain were identified as potential risks.
- Inadequate sales and reliance on an uncertain workforce, especially trainees who may pursue conventional employment, were also cited as causes for concern.

To mitigate these risks, the company emphasized the significance of securing supply, grants, partnerships, and government affiliations to defend itself from competitors and ensure financial sustainability. Regional supply monopoly, or monopsony, provides protection against competitors and increases market share.

5.3.7. Networks and Organizations

During the interview, the business emphasized the significance of networks and organizations to their operations. The company CEO mentioned that they are essential for "*. . . to access funding*". They mentioned their involvement with funding organizations such as the state government responsible for the implementation of circular economy, which plays a crucial role in sustaining their projects. In addition, they emphasized their membership in the peak industry body representing local councils which provides them

with valuable connections and collaborative opportunities. The CEO mentioned that "*. . . it gives us some credibility*". These networks and organizations contribute to the company's growth, knowledge sharing, and access to resources, allowing them to exert a greater influence in their industry.

5.3.8. (Tangible and Intangible) Ecosystem Level Activities

The company emphasized the significance of engaging in tangible and intangible ecosystem-level activities to advance its mission. They have formed alliances with all resource/waste transfer stations in the Melbourne metropolitan area, as well as with a company, the principal agent for the collection of hard refuse. Collaborating with other businesses to acquire used bicycles is another crucial aspect of their ecosystem strategy. The company CEO mentioned that "*. . . so to work with the partners, we have to convince them there is value to working with us . . . they're staff can also volunteer here, so staff volunteering is really important for corporates. They because they give staff one or two days a year off to do volunteering*". In addition, they highlighted their partnership with a government agency that implements a circular economy strategy, as an essential ecosystem partner that provides financial support. Company X intends to demonstrate the value of collaborating with these ecosystem partners by highlighting their environmental credibility and corporate social responsibility. The CEO mentioned in this regard that "*. . . We can add to their own environmental credentials because they have to demonstrate that they are reducing waste, not just picking up. . . so, in when they go for tenders with councils, they have to demonstrate their own environmental credentials. So, they have added us into their tenders that they work with us, they give the box . . . so, it's that's a big advantage to them*". Through corporate partnerships such as workplace giving and waste separation, they engage brand-new bicycle retailers, giving their business a social and environmental purpose. The CEO mentioned that "*. . . in terms of bike retailers . . . they get again a social environmental purpose . . . so they can show their customers . . . they again are into recycling*". In addition, they utilize the vehicle service from a new car dealership and newsletters and public relations from the disability employment program to enhance their ecosystem-level activities. The CEO mentioned that "*. . . employment they are getting outcome employment outcomes which they get money from the government under the Disability Employment Scheme . . . So it's in their interest to partner with us to find the people that will be suited to hear*". These collaborations and efforts strengthen their position within the ecosystem and increase their impact.

5.3.9. Channel

Communication

Company X recognizes the importance of efficient communication channels in their operations. But the CEO mentioned that *". . . I think the hardest for us is communication . . . because we're dealing with some behaviour change, our customers buying but also our customers donating bikes".* The company actively participates in community festivals to raise awareness and encourage individuals to donate their used bicycles rather than discard them. He mentioned that in this regard, *". . . so it's usual for Australians to put a bike on the nature strip. We have a culture which says you just put your old bikes, and somebody will pick it up or not . . . technically, that's illegal and technically also you might be giving an unsafe bike to somebody else who, if they get injured"*. Company X emphasizes on the importance of providing potential donors with precise information about where their donations will go. The CEO said that *". . . so we're trying to change the behavior, as I said, for them to donate earlier and to give, you know, us the makes some chance to refurbish and give training opportunities"*. In addition, they use a variety of communication channels, including television programs, council newsletters, and free billboard advertising, to promote their charitable cause. But the CEO mentioned that *". . . so that's hard because we don't have the money for marketing . . . I was trying to get into the cinemas, you know, the advertising cinemas. But nobody will do it for free*". By utilizing these channels, Company X hopes to engage a larger audience with their bike donation

initiatives. Since customers are both donors and buyers of bicycles, communication presents challenges, particularly in terms of behavioral change.

Recovery

The company understands the significance of efficient recovery channels to its operations. They collaborate with a variety of waste transfer stations, including council-owned and privately owned facilities. In a metro location in Melbourne, a specific waste transfer station has been established for the accumulation of used bicycles. In addition, they have partnered with several other companies to serve as external bike collection points, making it convenient for customers to send off their donations. By developing multiple channels for product recovery and donation, they intend to simplify the procedure and make it more accessible to the community. The CEO mentioned that "*. . . We have partnered with all the transfer centres in Melbourne . . . so whether it's Company B (name omitted due to confidentiality) or whatever, or council owned, we partner with every centre in Metro Melbourne . . . so they now put the bikes they get aside and we pick them up . . . We work with Company B, because they do most of the hard rubbish collections*". According to the CEO's experience in the non-profit sector, donated goods sold in retail outlets are of higher quality than those discovered in dumpsters. The CEO mentioned that "*. . . But in doing the hard rubbish collections, they take the bikes to a resource recovery center . . . We are actually now picking them up, so instead of them going straight to waste, we've diverted them*".

Connecting with the upstream supply chain facilitates the acquisition of high-quality returned goods. In addition to collection points at community festivals and bike masters, bikes can also be donated at community festivals. The CEO mentioned that "*. . . around putting us in, . . . going to their community festivals to again encourage people to donate rather than put into waste*". Utilizing a multi-channel product recovery strategy is economically viable, allowing for straightforward quality evaluation and waste reduction. The CEO stated that "*. . . in terms of quality of product and the most profitable were the ones that had donations come in through the door. They didn't come in through the bins*". The CEO also mentioned that "*. . . we've got to do we trying to devise more channels if you like for them to donate because they're the quicker they donate them, the best deterioration they have and they're more economic to refurbish and less, they'll be waste. So, to minimize that waste*".

Distribution

The company employs a multi-channel distribution strategy to effectively reach its consumers. They engage potential customers with web-based marketing that features enticing images of their shop floor. The CEO mentioned in this regard, "*. . . so if you look at our website, you'll see a picture of the shop floor, . . . and they look, they look great, bikes, don't they? . . . so we've even had people come in that don't realize it's a second hand bike store*". Customers can simply browse and select products for click and collect via their online platform. However, there is a problem with the delivery of the online-purchased bikes and he mentioned that "*. . . So we could be missing out on sales because we can't deliver. So even if people buy online and are through the website, they still have to come to the physical store*". In addition to their online presence, they maintain a physical storefront where consumers can make in-person purchases. This combination of online and offline channels enables the company to provide customers with convenience and adaptability, catering to their various preferences and requirements. By utilizing both web-based marketing and a physical store, they intend to maximize their distribution reach and provide customers with a seamless purchasing experience. However, the CEO wanted to provide more services online in terms of delivery services and placing several shopfronts in the future.

5.4. Value Proposition

5.4.1. Customer Relationships and Collaboration

Company X employs a multifaceted strategy for effective customer engagement. First, they strategically position physical stores and collection points near their customer base,

ensuring easy access and nurturing a sense of closeness. Communication and awareness campaigns play a crucial role in educating consumers on the value of used bicycles and promoting their advantages of reuse. Additionally, the company stresses the significance of maintaining high-quality standards for returned products, ensuring customer fulfillment, and establishing trust. In addition to selling new bicycles, physical stores also serve as donation centers, promoting customers to make contributions. The CEO mentioned that "*. . . because anybody you know, a lot of rubbish was put in the bins. . . . So when you have to take your, you know, your donated clothing into the shop, you're not gonna give them rubbish*". Prioritizing marketing and communication efforts to reach a wide variety of consumers, including those from affluent suburbs is also part of their value proposition strategy. Regardless of a customer's socioeconomic status, it is essential to comprehend their needs and preferences to provide customized solutions. The CEO said that "*. . . They just want a quality, affordable product . . .*". Additionally, the company partners with other new bike retailers, to encourage customers to donate when purchasing a new bicycle, nurturing a relationship that is mutually beneficial. These customer-centric strategies and partnerships are essential to the company's success and expansion.

5.4.2. Concept for Unfair Advantage

During our interview with the company, the authors discussed their concept of unfair (market) advantage. They distinguish themselves and acquire a competitive edge by utilizing several key factors. First, the presence of physical stores normalizes the purchase of used bicycles, such as the purchase of used automobiles, which fosters a sense of acceptance and familiarity among consumers. In addition, by positioning their company as a charity and emphasizing the product's reusability, they capitalize on the value, consumers place on supporting charitable initiatives. The CEO mentioned this issue and said that "*. . . So we know we're getting quality bikes in the for us. If people can donate the bikes before they get into waste*"*. . . We know they're gonna be a much better quality and much more economic, so our objective is to maximize the percentage of bikes that we receive to be refurbished . . . So to do that, we've gotta go further up in the if you like, upstream in the supply chain*. This enables them to capture market demand from an array of customers. In addition, the business CEO's prior involvement with various charities strengthens their role and their positioning as a not-for-profit enterprise. By operating as a non-profit, they can effectively balance the supply and demand aspects of the business. The CEO said that "*. . . we have to protect ourselves from competitors"*. In essence, their strategy enables them to establish a monopoly, which provides them an unfair advantage in the marketplace. He stated in this regard "*. . . So often a monopoly as you know, monopolies are, . . . business monopolies. But then you have a supply monopoly, which kind of monopsony . . . Often, often a monopsony is more powerful than a monopoly . . . So if you've captured all the supply, then the competitors won't get in . . .*".

5.4.3. A Unique Circular Value Proposition

The company is a social enterprise that sells refurbished used bicycles with an emphasis on reducing the number of bicycles that wind up in landfills. They establish brick-and-mortar stores as distribution points, offering quality-approved used bicycles to consumers. By encouraging the use of refurbished bicycles, they contribute to the extension of product life and the conservation of resources. Additionally, the company prioritizes its social impact by employing youth with special needs. They emphasize that there is no substantial quality distinction between new and used bicycles. In addition, their customer-centric approach ensures that the products satisfy the needs and requirements of various customer segments, including older individuals who are prepared to invest in a product that meets their preferences. This distinctive circular value proposition distinguishes the company and demonstrates its dedication to social and environmental sustainability.The CEO mentioned the issue that "*. . . It has a social value, so the social value is young, people with disabilities getting work experience and going to mainstream employment. So we to some customers that's important to some it isn't. But to some customers that is. And then the environmental, you know, reduction*

of waste will be important to some customers". All these aspects were considered as unique circular value propositions mentioned by the company CEO.

5.4.4. Needs/Problems/Challenges

Company X highlighted several needs/problems/challenges that they want to address in the first place. The company CEO said . . . *we've got two challenges that we're trying to address, (1) between half a million and a million used bikes in Victoria . . . and . . . national research shows that about half of used bikes that end up in landfill; . . .a bike is 13 kg, on average that potentially means that at least 3000 tonnes of waste. . . . that won't break down. So that's number one (of the challenges) can we reduce used bike waste going into landfill? And (2) can we try and develop a circular economy around used bikes?* The inability of the products to degrade exacerbates the problem, but importantly, there are ways to optimize the second-life use of discarded bicycles, as mentioned by the CEO. In Melbourne, specifically, there is a lack of consumer culture focusing on the reuse and repair of goods and services. The CEO mentioned that . . . *but we don't have a culture, certainly in Melbourne . . . to buy secondhand bikes.* Concerns regarding the dependability, security, and cost-effectiveness of used bicycles also influence consumer behavior. In this connection, the CEO mentioned that . . . *we influence behaviors that people buy more used or quality, affordable and tested used bikes*. The CEO also gave reference to the clothing sector and stated that . . . *As an alternative to new box in the same way as you know, clothing now is accepted to be, you know with lots of people go to help shops to buy clothing*. Commercialization efforts are hampered by the lack of adequate funding to collaborate with all Melbourne metropolitan councils. The CEO mentioned in this regard, "*. . . they feel quite confronted by a bike shop*". Due to technical jargon, traditional bike stores can be intimidating for older individuals. The presence of inexpensive bicycles on the market exacerbates the situation. Ineffective marketing is hampered by limited resources (as mentioned "*. . . we can't afford marketing*"), while 80 percent of the population fails to recognize the social and environmental value of products/services provided by a social enterprise (as mentioned. . . "*but the theory goes that 80% of customers don't care*"). The inability to provide delivery services to customers who purchase bicycles, the social stigma encircling used bicycles, and a lack of human resources for communication exacerbate the company's existing difficulties. These are the main problems and challenges identified by Company X.

5.4.5. Targeted Solutions

Company X focuses on utilizing used bicycles as a valuable product within the circular economy, influencing the behavior of individuals to embrace affordable and high-quality used bicycles. Understanding consumer behavior and the reasons for their reluctance to purchase used/unwanted products require market research and survey. It was facilitated by project financing from funding organizations, but more funding is required in this area. The CEO mentioned that. . . "*so we're actually getting hopefully getting some funding from CE-related organizations, that behavior works, will do some surveying around why the people not buy used bikes*". Establishing physical stores dedicated to used bicycles, strategically altering consumer behavior, and dispelling the notion that these bicycles are waste are elements of the company's strategy. The CEO mentioned that . . . "*now that might be issues around safety or affordability or whatever it is, but I ideally what we're trying to show because we have this superstore now is that it should be more normal to buy a used bike*". By partnering with transfer stations, the company diverts unwanted bicycles from landfills, and multiple drop-off locations make it convenient for customers to dispose of their old bicycles. The CEO mentioned that "*. . .in metro Melbourne where people can take their bikes so we're even trying to stop them putting the bikes out in hard rubbish or taking them to the transfer station*". By emphasizing the quality of their bicycles, this initiative intends to alter people's perceptions. Especially for students, proximity to consumer bases to grocery markets facilitates accessibility. The CEO also mentioned that "*. . .and in terms of the showing people, the quality of the bikes, we're looking at retail space of a market. . .. the purpose of precincts up in near a market, universities, so young*

people buy their bikes and that they need for university". Company X distinguishes itself by not competing with low-cost cycle distributors and concentrating on producing high-quality goods. In this regard, he mentioned that "*. . .And we never gonna compete with the cheap bikes that the super or department stores sell like*". The company anticipates having multi-channel collection points in the future, with potential locations such as hardware stores as future collection hubs.

5.4.6. Characteristics of Product/Service/Features/Performance

The product features and characteristics of Company X include a greater emphasis on quality-controlled and tested used/repaired motorcycles to ensure their dependability. The CEO mentioned that "*. . . So it has so as well as being quality, affordable and tested, . . . also long life product*". The aesthetic value of the used bicycles is also accentuated, providing customers with visually appealing options. These bicycles are less expensive than brand-new ones, making them more accessible to a larger audience. With their durable construction, refurbished bicycles provide durability and sustainability. In addition, the product has a high social value because it provides employment opportunities for the disabled. By repurposing and refurbishing bicycles, the company contributes to the reduction of debris and thus lowers environmental impact. The product is a viable and robust option that incorporates quality, aesthetics, affordability, longevity, social impact, and environmental sustainability.

5.4.7. Customer/Users/End-Users/Beneficiaries Segments

Among the highlighted key aspects are environmentally conscious consumers who prioritize sustainable options. Additionally, the company caters to low-income households, especially for children's bicycles, by providing affordable options that make cycling accessible to all. Density-based consumers, such as those who frequent a local market, are also a significant segment. Recognizing their need for inexpensive transportation options, university students are also targeted as prospective customers. The CEO mentioned that "*. . . the customer or end user segments . . . targeting like the university going students . . . low income households . . . environmentally conscious . . . recreational bike riders . . . we never gonna sell to the serious bike riders who spent thousands of dollars on their bike*". Lastly, the company intends to serve senior citizens who are rediscovering the pleasure of recreational cycling. With a wide variety of customer segments, the company strives to provide individualized solutions that satisfy the specific requirements and preferences of each segment.

5.4.8. Benefits and Burden (Customer, Society, and Environment)

Key factors include the company's contribution to resource conservation through the repurposing and refurbishment of bicycles. By diverting bicycles from landfills, the company actively reduces its environmental impact. The company CEO mentioned that "*. . . So we're trying to change the behavior, as I said, for them to donate earlier and to give, you know, us the makes some chance to refurbish and give training opportunities*". In addition, they emphasize the social impact by providing employment opportunities for disabled people, thereby fostering inclusion and empowerment. Through initiatives such as donating bicycles to refugees and low-income families, the company extends its benefits to underserved communities, giving them access to affordable and environmentally friendly modes of transportation. The CEO said that "*. . . We also donate bikes to refugees . . . so we have some people that donate money to us and they are gifted bike program*". Additionally, customers' charitable contributions support gifted bicycle programs, thereby facilitating additional positive social impact. The CEO stated that "*. . . So the customer can actually pay 50 to $200.00 donate it to fund a bike for somebody else. So, the customer feels good, they feel good about the brand*". With a focus on resource conservation, social empowerment, and philanthropic initiatives, the company seeks to alleviate burdens and generate meaningful benefits for customers, society, and the environment.

5.5. Value Capture

5.5.1. Cost Structure

The cost of bike mechanics, ensuring quality assurance and bike maintenance are discussed as key elements. Additionally, the business incurs costs associated with human resource development, specifically payments to trainees. The CEO said that "*. . . paid workforce that are expert of what they do . . . I've gotta raise trust and foundation grants to pay for that training cost of the trainees . . . we rent the warehouse . . .*". Rent for the facility where bicycles are stored and refurbished is an additional cost factor. The company relies on grant funding to acquire the necessary equipment to support its operations. In addition, partners provide leased vans, which reduces their transportation expenses. The acquisition of spare parts and bicycle accessories, including locks and helmets, also contributes to the cost structure. By managing these costs carefully, the company endeavors to maintain operational efficiency and sustainability.

5.5.2. Revenue Stream

The company generates income primarily through two channels. First, they generate revenue by selling customers bicycles and accessories which are sourced at low/no cost. This includes providing a diverse selection of refurbished bicycles and accessories such as locks and helmets. The CEO mentioned *". . . We obviously bike accessories so they can purchase bike locks and all those kind of things for their bike and helmets. So, we sell accessories"*. Company X generates additional revenue through repair and maintenance services. They appeal to customers who require assistance with bicycle maintenance by providing expert repair services. The CEO said that *". . . Kind of repairs and maintenance servicing . . . So because there isn't, there isn't always box servicing places around here, so we sometimes get a request for servicing"*. These revenue streams contribute to the company's financial viability and allow them to continue providing products and services to customers.

6. Discussion

6.1. Methodological and Canvas Design Perspectives

This study contributes to the CBM's reference framework development as it is a visual business model innovation tool that has been tested on the social enterprise, and the justification of each building block has been validated by seeking responses from the participant (e.g., CEO of the social enterprise). Unlike many frameworks and tools developed in the CBM literature, this study successfully validated its components showing practical application to real-world (hybrid) circular business. From the design architecture of various canvases (described in Section 2.4.1), sustainability and circularity aspects were integrated into one place, facilitating users to comprehend issues that should be considered designing their respective CBM. The extensive illustration of the development of the proposed "Circular business model value dimension canvas" (in Section 3) showed that it covered essentially all core business modeling required. Although, in this paper, only social enterprise was taken as a case study, it is believed that such a canvas may be applied to various types of businesses. The background described in Section 2.4.1 showed that each building block for the proposed canvas in this study was taken by analyzing diverse ranges of canvases and their associated applied case studies, given the confidence of applicability to the social enterprise and other industries and sectors. Future research on applying the canvas to other types of businesses is an important highlight. In the coming research endeavor, the authors of this article will apply the canvas to other types of CBMs, such as sharing platforms, resource recovery, and product as a service models. This would be an exciting research area observing some critical components, for example, for manufacturing-type business, where risk assessment and management, and key metrics and data management-related aspects in the business model as dynamic models may also be integrated. This canvas can be considered an alternative to traditional BMC canvas, which provides a more extensive outlook of a business from the lens of value dimension segments and benefits and burden on customers, society, and environment, and targeted sustainable

development goals. Multiple case studies could substantially improve the methodological approach using the canvas and provide a greater understanding of a specific sector (e.g., fashion and textile).

6.2. Theoretical Perspectives

This study provides a detailed understanding of a hybrid CBM in a social enterprise context. It demonstrates how multiple circular economy strategies (e.g., rethink, reduce, reuse, repair, and refurnish) can be integrated into a single business model, contributing to the theoretical understanding of CBM design and implementation. As several CE strategies and CBMs are integrated into the tool and tested at the business level, according to Lewandowski [19], this study also contributed to the BMT. The tool developed in this study identified customers' want, dynamic capabilities, and resources that the social enterprise had to meet and their revenue generation mechanism, which eventually aligned with the notion of the BMT presented by Teece [12]. In addition to that, according to Chesbrough and Rosenbloom [13], this study also found all the major components that need to be analyzed from business model theoretical perspectives, such as value proposition (and associated problem–solution space), appropriate technology for value retention for circular design and features of circular products, range of customer segments, ecosystem-level coordination for circular supply chain and value capture components (cost and revenue streams of the business). Likewise, by developing an innovative business model canvas in this study, this study contributed to the circular economy business model canvas theory and practice, as mentioned by Pollard, Osmani, Grubnic, Díaz, Grobe, Kaba, Ünlüer, and Panchal [21]. To some extent, this study also contributed to Nußholz's [23] skepticism around resource efficiency integration with the CBM, where Company X implemented maximum resource utilization techniques both at a material level and from a financial perspective. Stakeholder interests in achieving strategic sustainability in the business ecosystem and working on common goals were practiced by Company X, which was mentioned previously mentioned by Wit and Pylak [24] and Kurucz, Colbert, Luedeke-Freund, Upward, and Willard [25] for critical illustration of implementing stakeholder theory. True collaboration for shared value creation aligns with the stakeholder theory previously mentioned by Bocken [26], which was evident from the present study where Company X collaborated with other businesses for product return, resource recovery, economic viability evaluations, and job creation. As a social enterprise is a catalyst of social and economic change, mentioned by Rahdari, Sepasi, and Moradi [30] as an indication of the theory of entrepreneurship, this study also showed that circular mindset solving the waste-related problems and environmental benefits of material reuse and resource efficiency is an emerging aspect of circular entrepreneurship. The literature review presented in Section 2.3 showed that the nature of the integration of theories with the CBM and, more significantly, the CBMI context (i.e., for framework and visual canvas-based business model tool development) is vast and not mature enough as many of the organizations are transitioning from linear to circular by devising a diverse range of CE strategies and existing knowledge base of operation and business management. Thus, this study contributed to bridging the gap between theory and practice around social enterprise (hybrid) CBM and various associated theories identified within Australian businesses.

To some extent, it can be said that CBMI-related canvases as tools and frameworks have strong connections integrating stakeholder theory, entrepreneurship theory, agency theory, the "Lean Startup" approach as a theory, and BMT in general. However, there is an opportunity to investigate the "Lean Startup" approach for new social enterprise-type business models embedding CBM-oriented strategies. With the proposed canvas, lean experimentation could be conducted in social enterprises and other startups or small and medium enterprises.

6.3. Circular Social Entrepreneurship and Business Models

Several studies considered the social aspects of various types of businesses from the context of small and medium enterprises (SMEs). However, many studies focused on social enterprise within the CBM-related aspects (e.g., CE principles, strategies, archetypes) and sustainability). A social enterprise might be an SME. However, all SMEs might not necessarily be social enterprises that generate income but also focus on sustainability triple bottom lines (e.g., social, economic, and environmental). Furthermore, awareness, knowledge, and education are significant parts that should be included at the early stage of the business model innovation (BMI) process. Nygaard et al. [82] conducted a case study of six SMEs in Northern Jutland, Denmark, and found that the majority of SMEs work with the SDGs in a less proactive and ambitious manner, leaving a disparity between their designated role and their current practices. SMEs' approach to operationalizing sustainability is often broad, and many companies might not grasp the essence of achieving specific targets (due to difficulties as referenced by [83]), for example, Goal: 9—Industry, innovation, and infrastructure. From that context, this study provides indications tackling such complexities.

This study aligned with the studies of Smitskikh, Titova, and Shumik [64] and Chineme, Assefa, Herremans, Wylant, and Shumo [71], who identified that circular economy-related strategy, waste reduction, reuse, and recycling, facilitate collaboration embedded in circular social enterprise. These are widely being applied by Company X, as seen in Section 5. The CEO has substantial knowledge of circular economy principles and strategies and has experience operating social enterprises in other sectors, which was previously identified by El Chaarani and Raimi [68], who mentioned that as the critical success factor of social entrepreneurship. Environmental and social sustainability-oriented mindset and contribution were seen as the significant attributes of social enterprise identified by Staicu [65] and were also evident from Company X, which underpins the job creation of disabled young people and diverts waste from landfills and extends the product lifespan by collaborative value addition. Thus, it contributes to the community and, at the same time, generates revenue [66]. From the interview with the CEO of the social enterprise, it is seen that his motivation for solving the waste-related problem was motivated by CE principles and strategies, which play an essential role in transitioning to a CE at scale [64]. Physical space for interaction, product and material upcycling, and product distribution were identified as critical assets for Company X, previously mentioned by Staicu and Pop [67]. Participation of local stakeholders, local innovation system, proximity to customers, and the structure of supply networks was previously mentioned by Real, Lizarralde, and Tyl [69], which were seen being implemented by Company X. Localized decision-making was mainly found necessary by Real, Lizarralde, and Tyl [69], which the case company successfully implemented. Although challenging tasks, social enterprise communicating product's social and environmental values to customers has long-standing impacts [70], both from sustainability viewpoints and economic gain by the business; that is why changing peoples' behavior is one of the central missions of Company X. Although previously identified for the clothing and textile sector, challenges identified by Staicu [65] were almost the same for the social enterprise working with bikes. The probable reason is factors coming from the external environment (e.g., government, consumer, policy) and internal as well as, for instance, understanding the customer needs and network and partnership with secure (secondary resource acquisition). Company X overcame many of the challenges; however, funding-related issues for marketing, infrastructure (e.g., warehouse, tools), and understanding consumer behaviors still need to be overcome, which is unlike the findings of Staicu and Pop [67], who mentioned that there were poor interactions among the textile and apparel sector stakeholders.

Based on the understanding of the results of the study (Section 5), generalized components of social enterprise working with hybrid CBM can be shown in Figure 2. Waste reduction from environmental perspectives and job creation for young people with special

needs were considered the critical components of the business model from environmental and social considerations.

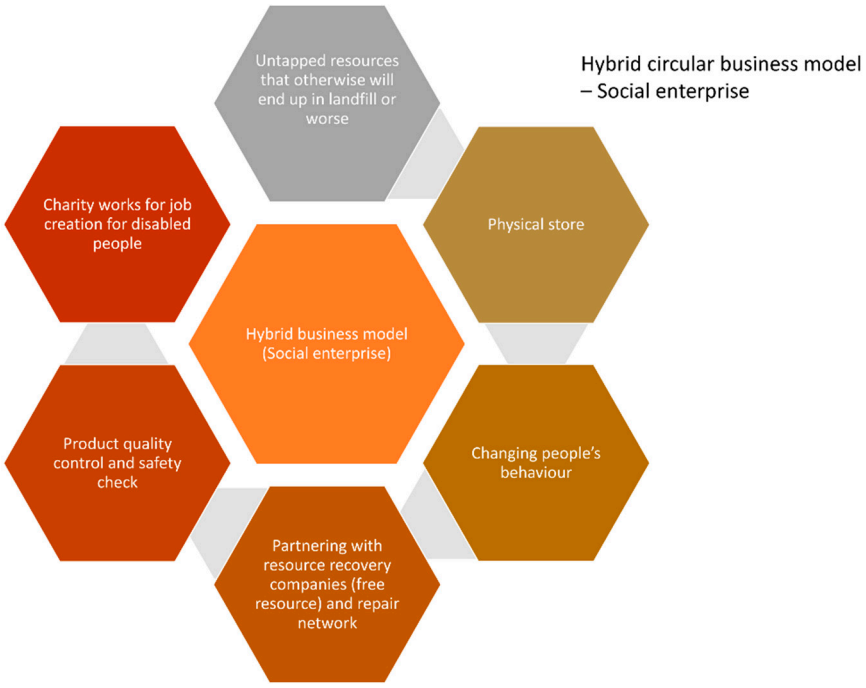

Figure 2. Essential components around hybrid circular business model in a social enterprise.

6.4. Contextual Factors of Hybrid Business Model—Focusing on Social Enterprise

6.4.1. Synergic Partnership and Collaboration

Synergistic partnerships, stakeholder involvement and governance, resource recovery strategies, social impact and community engagement, and marketing and communication initiatives are some of the critical components identified for the case study. Based on the results presented in Section 5, the ecosystem partnership-related activities required for the social enterprise can be illustrated in Figure 3.

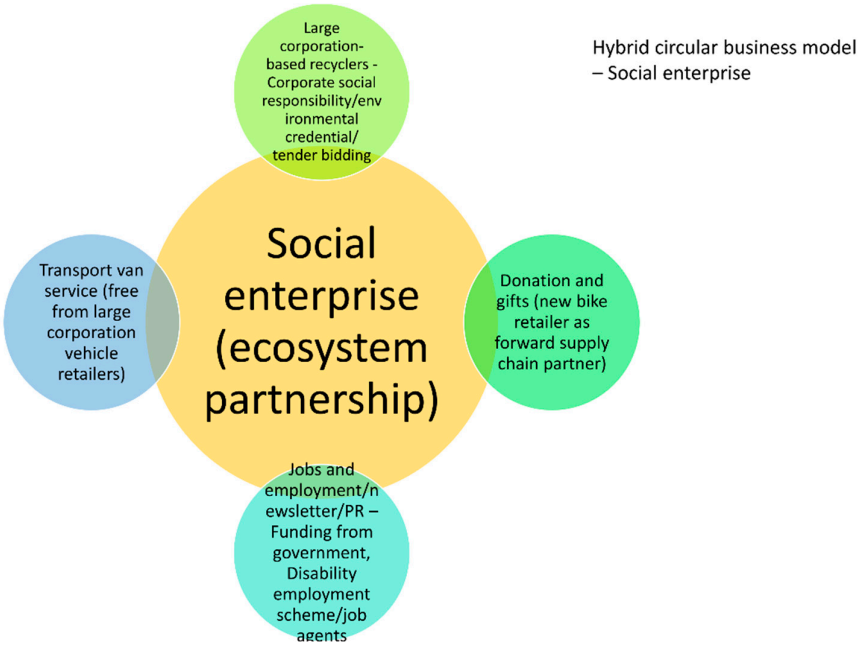

Figure 3. Ecosystem partnerships in social enterprise as part of the hybrid circular business model.

Collaborative partnership for sustainability [32], "sharing" (maximizing asset use, prolong service life) CE action [45], enhanced supply chain visibility, exchange of information, opportunities of acquiring government subsidies and creating new value proposition [49], securing sufficient supply of secondary products [23], value co-creation by strategic sourcing and cooperative networks [19], target market, citizen's participation, value creation, public–private partnerships and for enhanced delivery capacity (capitalizing circular material and energy flows) [54] are some of the results of synergistic partnerships which is reflected in the company's CBM. Governance-related aspects were highlighted by the company's social and ecological intention for value creation along with partners, previously identified by Kurucz, Colbert, Luedeke-Freund, Upward, and Willard [25]. Good governance results from corporate sustainability and responsibility strategy [30], reflected in the case study company, were operationalized as both forward and reverse supply chain partners. Pursuing high-quality communication with partners and stakeholders is the reflection of upholding a company's strategic green (sustainability) ambition [52]. Goal 8 of SDGs is directly connected with the company's effort to improve diverse employment programs within the social enterprise context, previously identified by Rahdari, Sepasi, and Moradi [30].

6.4.2. Dynamics Capabilities and Business Resilience

Streamlining inventory acquisition, supply chain collaboration and resource recovery, economic viability evaluations, alliances with recyclers, development of young people and community engagement, data management and information systems, market expansion and customer retention strategies, pricing policy, and refurbishment prioritization were identified as the primary internal activities which reflected the dynamic capabilities of the enterprise. Inventory acquisition was undertaken by the company from various sources. Furthermore, business ecosystem-level activities, partnerships, and circular collaborations are vital for efficient product return in the supply chain. Figure 4 shows the product return strategy of Company X.

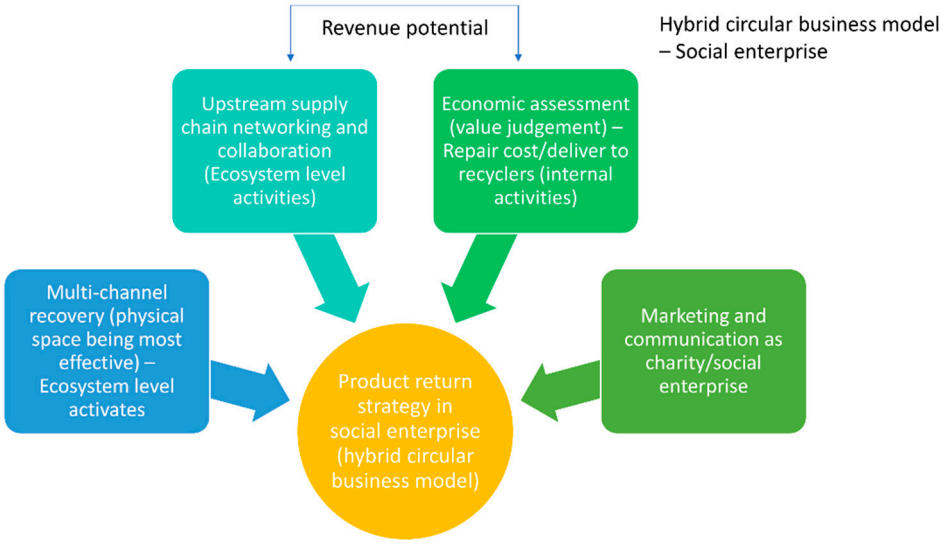

Figure 4. Product return strategy in hybrid business model of social enterprise.

Resource acquisition and adoption of new environmentally friendly technology were part of the critical activities for maritime operations identified by Gjøsæter, Kyvik, Nesse, and Årethun [52]. Acquisition of resources is an implementation phase in the BMI [49]. Supply chain collaboration opens opportunities to deliver superior BM in line with providing solutions and services around the reverse supply chain, as seen by Maria and Katri [42], which is also evident from the case company. The value creation-related activities are strongly interrelated with "the conceptual logic for value creation" and economic value

retention (i.e., a new service offers the remaining lifespan of a product) [55]. The case company's involvement with recyclers for material recycling shows the intention of increased system efficiency and reverse logistics participation. This was previously identified as part of the "optimize" CE implementation action by Mendoza, Gallego-Schmid, and Azapagic [45]. Local community groups as suppliers [18], eco-social benefit [27], and community-based access to resources and products [57] were identified as the results of community engagement which is also reflected in the case study company. Data and information system management enables resource optimization [19]. Company X uses such systems around families, funding, fundraising, inventory, sales, and supply chain. According to Hofmann, Marwede, Nissen, and Lang [17], eco- and social-effective business activities by creating value for all stakeholders are conducted in CBM, and the case company (Company X) envisions expanding the market share to other states by aligning with the strategy (e.g., resource recovery, disability employment). Innovative governance practice is one of the main characteristics of entrepreneurial firms [84], which is also shown by the CEO of Company X balancing the interests of various stakeholders. From the discussion with the CEO regarding various SDGs, Goal 5: Gender equality, Goal 8: Decent work and economic growth, and Goal 10: Reduced inequality were identified as some of the core goals. According to Irfan Saleem et al. [85], diversity policies (e.g., age, gender, and ethnicity) positively affect sustainability performance and achieve organizational goals. This finding is aligned with the results identified for the case of Company X, which prioritizes disability employment as one of the enterprise's core values and highlights the CEO's sustainability mindset. There is also a risk of losing market share if consumers do not embrace the CE concept [46], which is why changing behavioral change is one of the core activities of the case study company, Company X. In addition to that, decentralized collection points, retailer integration, and external partnerships were initiated by the company. Price competitiveness is one of the challenges of circular products and services [56] which Company X mitigated by securing a supply of low-cost inputs (used bikes from various sources) and engaging partners from the forward supply chain (bike mechanics from retailers). Product use extension-based CBM focuses on refurbishment, which is one of the recovery strategies [32], a fundamental core activity of the business that eventually "optimizes" the CBM implementation [45].

6.4.3. Critical Resources Base for Success

Resource utilization and partnerships, physical infrastructure and facilities, human resources and expertise, inventory management and sales system, branding, and customer perception were the critical aspects identified as crucial resources for the company. Increasingly, companies in the CE and sustainability space are more concerned about issues such as climate change, waste, resource depletion, and biodiversity loss [55]. Partnerships as a critical resource with both forward and reverse supply chains help the company use existing resources and eliminate waste generation to landfills. Physical infrastructure is the prerequisite for CE and climate change mitigation efforts (related to goal 9 of SDGs) [30], also considered by the case company. Lack of infrastructure and space was identified as one of the barriers to CE implementation identified by Mendoza, Gallego-Schmid, and Azapagic [45], which the case study company also identified. Human resources through outsourcing contribute to "optimizing" CE action and CBM adoption [19]. Similar notions were prescribed by Donner et al. [44], where human resources are essential to canvassing CE solutions. Wit and Pylak [24] mentioned that it is also critical for value proposition and distinguishing a business solution to provide to the market. Efficient inventory management minimizes operational risks [22]. Inventory management may involve sales, procuring, inbound logistics, warehousing, and delivery [59]. Branding as value-adding was identified by Stal and Corvellec [55] as a critical factor for CBM adoption and implementation. Hoveskog, Halila, Mattsson, Upward, and Karlsson [28] identified that awareness and reflection on sustainability trends in BMI should include strong branding. Consumer perception around secondhand products may create uncertainties in commercializing a

product [29], and in the case study, the company is actively working on changing people's behavior. Workforce and proprietary design information were the essential resources of a case presented by Pollard, Osmani, Grubnic, Díaz, Grobe, Kaba, Ünlüer, and Panchal [21].

6.4.4. Organizational and Operational Risks

Awareness and cultural barriers, unbalanced competition and pricing challenges, supply chain risks and regulation, workforce challenges, risk components, mitigation strategies, regional supply monopoly, and market share were identified as crucial components under risk assessment and management building blocks. Lack of awareness and understanding of CE were critical factors for not embedding CE principles in a project [45]. According to Salvador, Barros, Donner, Brito, Halog, and De Francisco [56], "non-existent markets" or markets with "no customers" are caused by a "lack of consumer and market awareness" or even "ignorance", which translates to a lack of awareness or knowledge about the market and the benefits of the products sold in it. Brown, Baldassarre, Konietzko, Bocken, and Balkenende [32] identified risk and uncertainties as part of circular-oriented innovations. The scarcity of virgin materials and the potential environmental impact of virgin mining were identified as a risk by Stal and Corvellec [55]. Risk and safety issues were identified as one of the challenges and requirements of CE implementation under "share" CE actions [45]. Data gathering and analysis, development of innovative value-capture mechanisms, and engagement with stakeholders for efficient resource use were some mitigation measures against risks proposed by Mendoza, Gallego-Schmid, and Azapagic [45]. Increased price volatility of resources and associated supply risk were identified as critical drivers for businesses to consider CBM [49].

6.4.5. Circular Product Design and Product Lifecycle Management

Circular design principles, skilled labor, intensive repair, minimization of new spare parts, tangible tools, and maintenance equipment, maximizing value and sustainability, scalability, and replicability were the highlighted issues for the company under the "circular design by adding value or retaining value" building block. Implementing circular design requires designers to consider the resources and production processes [38]. Product life extension (PLE) or strategies for increased durability of products, enabling the use of products longer, directly support CE principles [49]. Design for long-life products (attachment and trust, reliability, and durability) and design for product-life extension (ease of maintenance and repair, upgradability and adaptability, standardization and compatibility, and disassembly and reassembly) are eco-design strategies for slowing resource loops [46]. The circular design corresponds to business activities during a product's pre-use, design, production, and distribution phases [34].

6.4.6. Data Management and Performance Enhancement

Impact measurement and social commitment, data management and analytics, critical matrices for decision-making, challenges, and opportunities in data analytics, and continuous enhancement of circular economy initiatives were some of the critical aspects identified from the case study that emphasized the "Key matrices, CE analytics, and data management" BB. Evaluating the impact of sustainability and circularity was one of the critical components of Maria and Katri's [42] framework in which sustainability costs and benefits and circularity evaluation were added to the traditional BMC. Several employment opportunities for young disabled individuals and several repaired and resold bicycles were some of the assessment matrices for Company X. From this perspective, it can be said that the assessment criteria directly align with a business model development by including triple bottom lines of sustainability. Currently, spreadsheets for stock and sales-related data are analyzed, which are not an upgraded system. In connection with this aspect, a dynamic monitoring system (i.e., online inventory system) of inventory, tracking and checking locations, conditions, and availability of resources was suggested by Mendoza, Gallego-Schmid, and Azapagic [45] for refurbishment. For smart city applications, Giourka et al. [14] sug-

gested that internet-of-things (IoT) sensors could be applied to connected devices for big data analytics. Product design information should be used for business-level planning and system-level decision-making [46].

6.4.7. Institution and Infrastructural Support for Market Leadership

From the social and circular entrepreneurship perspectives, funding/investment schemes are critical as positive interventions to boost entrepreneurial effort [86]. For external activities, funding is essential for social enterprise [66]. Business sector funding with effective partnerships was identified as one of the significant factors for social enterprise [70]. For transport service van, volunteers, and supply of tools, were some of the indirect supports received from business eco-system partners for Company X. For social equity along the supply chain, supply chain collaboration and material sourcing from various (open) sources are critical [86], which was implemented by Company X. It is understood that institutional support in terms of funding, affiliation of industry peak bodies, partnership with forward and reverse supply chain businesses helped Company X to secure stable (secondary) resources to be used in value creation that also balance the market competition with low-value products. Company X established itself as a market leader in the secondary bike refurbishment business by mitigating the associated risk described under the risk assessment building block of the canvas. Based on these understandings, Figure 5 shows Company X's resource acquisition and market leadership strategies, which can be illustrated as a conceptual framework for enterprises as well.

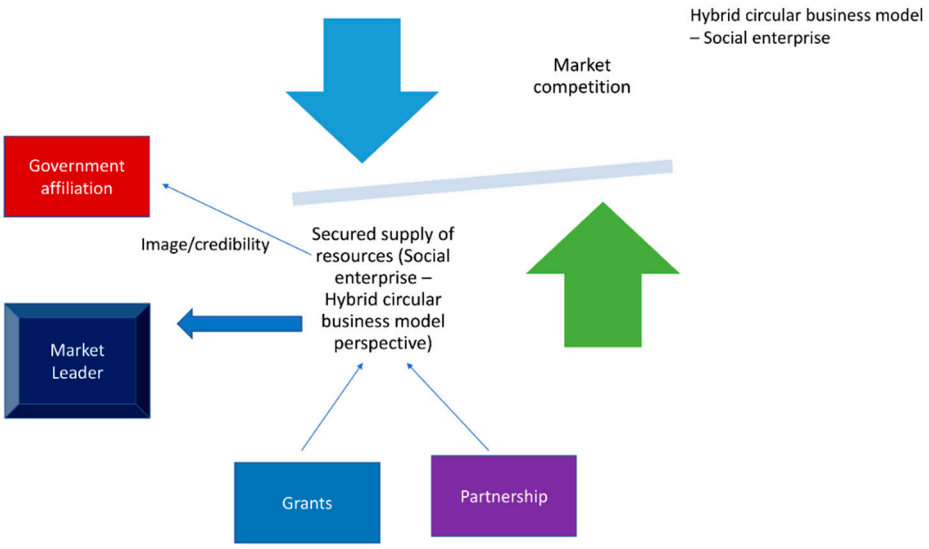

Figure 5. Resource acquisition and market leadership establishment effort of Company X.

7. Limitations and Future Research Directions

There are multiple limitations of this study. This study took a single case study approach which can be expanded to multiple case studies. The building blocks identified in the canvas could then be further divided into subcomponents to facilitate a business promptly identifying sub-elements. For example, risk assessment and management building blocks can be divided into financial risk, operational risk, supply chain risk, and others. Due to the higher number of blocks in the business model canvas, it may take much work for businesses to use the canvas. However, one of the reasons for separating the value dimension into three components is that a segment of the development team can work to gather information individually, which can then later be joined and assessed strategically. With co-design sessions with industry professionals and academics, the canvas can also be redesigned, aligning with the industry circularity needs and aspects. There are a lot of critical components found in the sustainability contexts (Table 2), which can be used for designing advanced SBM canvases.

Several research directions from this research have been opened in the context of the circular business model. For example, enhanced communication strategies to change people's-behavior around second-hand product use and disposal of reusable products on the curbside needs to be further researched. One of the research questions arising during the narratives is whether customers expect to receive their products from a charity/social enterprise to be delivered to their door. Designing a return scheme around reusable bikes could be a potential area of further research. This canvas could be utilized in the manufacturing businesses' understanding of circular business model design and innovation opportunities.

8. Conclusions

This paper aimed to develop a business model innovation tool in the form of a canvas widely used in business model design focusing on circular business models. The canvas is called the "Circular business model value dimension canvas", which has nine building blocks in the value creation and delivery segment of the canvas, eight blocks in the value proposition, and two blocks in the value capture dimension. After (re)designing the canvas, a social enterprise practicing a hybrid circular business model (e.g., resource recovery, sharing platform, and product lifespan extension) was investigated to validate the canvas in terms of suitability of each of the building blocks and to identify the core components under each block. Identification of the elements provided a deeper understanding of how a hybrid circular business model works and what essential aspects from the perspective of circularity and sustainability should be included. Overall, from the analysis of the case study, it can be noted that a hybrid circular business model contextualizing a social enterprise requires forward and reverse supply chain integration (partnership with new product retailers and resource recovery companies), physical stores, up forward product return strategy, government funding support as an initial driver, employing younger generation with special needs and behavioral change around low-income customer segments to be successful. The study provides a systematic understanding of the structure and business modeling approach for circular business models from the Australian context. The study contributes to several theories connecting circular business models. This study also illustrates corporate organizations' involvement in value creation and delivery with social enterprise, which can be replicated for other types of firms and large organizations envisioning circularity via collaboration and partnership.

Using the developed canvas, the case study comprehensively analyzed a social enterprise's business model comprising three circular business models: resource recovery, sharing platform, and product life extension. Collectively, R-strategies such as re-think, reduce, reuse, repair, and refurbish were implemented in the hybrid model. Product return strategies, essential components that should be in a hybrid type business model, elements of eco-system partnership, and success factors in becoming a market leader were conclusively identified with the study. An incentive mechanism could be advantageous for an efficient product return strategy, especially a similar system like a container deposit scheme (i.e., in the form of advanced recycling fees, 10 cents per bottle). However, further assessment should be made from a socio-economic-technical perspective as distinct differences exist in high-value and low-value materials. From various stakeholders' perspectives, this study makes concrete suggestions; for example, the government agencies should provide continuous funding, especially marketing, and promotion, along with other business entities such as entertainment and recreation centers promoting circular products. Government funding initiatives should also be localized, targeting state-level business (i.e., prioritization of the Victoria government's CE funding for Victorian business). Large corporations can also tap into opportunities to collaborate with startups and SMEs, promoting their brand value as a circular initiative. There is a huge opportunity for data analytics businesses to be involved with local circular businesses developing tailor-made performance assessment systems and matrices with funding and philanthropic support. The electrical and electronic equipment (EEE) sector (e.g., e-bikes) could be one of the similar sectors that can

replicate the study's findings; however, core elements of a business model canvas can then be adjusted accordingly, mainly circular design (material and technology). Sometimes, that could be a single type of CBM rather than a hybrid (i.e., only resource recovery, sharing platform, or product use extension).

Identifying all the components in each building block also justified the necessity of the building blocks for the canvas as it allowed greater rigor to dive deeper into each of the main areas. Thus, the canvas showed practical application and potential use in other business models and various industries. The information and new knowledge on the hybrid business model component from the context of Australia have been identified with a case study which would be helpful for future entrepreneurs who are keen to follow a similar path or more advanced and innovative solutions to their businesses.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Origin of the building blocks of circular business model value dimension canvas.

Value Dimension	Building Block	Origin/Background
	Circular economy goal and scope definition	This block tends to identify user's circularity goals and associated R-strategies [7] tend to implement in their business model. It also identifies operating cycle and potential CBM types [11].
	Sustainability mission and action	Sustainable development goals described by United Nations [87] and environmental performance and sustainability consideration within circular business from the context of environmental, social, and governance (ESG). ESG inclusion is not a prominent approach within CBM. Previously, Fatimah et. al. [60] focused on ESG from the lens of e-business model.
Value creation and delivery	Key partners/stakeholders' involvement, relationship, and governance	This block is inspired originally by Osterwalder and Pigneur [3]'s BMC and the building block of "Key partners". Further modification was made to include the aspects of relationship, involvement, and governance-related aspects in one single place. Previously, stakeholder relationship is being mentioned by Daou et al. [20], while stakeholder involvement by Maria and Katri [42]. The governance-related aspects were drawn from "Social stakeholder Business Model Canvas" by Joyce and Paquin [18].

Table A1. *Cont.*

Value Dimension	Building Block	Origin/Background
	Key resources	This block is inspired originally from Osterwalder and Pigneur [3]'s BMC and the building block of "Key partners". In addition to that tangible and intangible resources mentioned by Lauten-Weiss and Ramesohl [40] are also compiled in this building block. Service and infrastructure-related aspects are also included mentioned by Scheepens et al. [88].
	Key activities (internal business)	Key internal business activities such as procurement, maintenance, staffing, and others come under these aspects keeping in mind the R-strategies and CE principles. Supplier outsourcing-related aspects are also included mentioned by Joyce and Paquin [18] in their environmental life cycle layer of the triple-layered business model canvas.
	Key matrices, CE analytics and data management	This "Key matric" was a building block of [39] by which a business can assess its performance. In [40], authors mentioned CE analytics. Kozlowski, Searcy, and Bardecki [38] highlighted data management aspects in their (re)Design canvas. All these aspects were taken into consideration for the block. This should be considered a powerhouse of knowledge and information by which business can assess their performance.
	Circular design by adding value or retain value	Value recovery, retain value, optimal use circular design, described by Achterberg, Hinfelaar, and Bocken [34] were comprehensively represented via this block. Circular design-related aspects were also mentioned by Lauten-Weiss and Ramesohl [40].
	Risk assessment and management	This building block was inspired by Wit and Pylak [24] who previously focused on reverse logistics only and this is generalized identifying various types of risks such as supply risk, unexpected policy and regulation, volatile market environment, unstable material and energy price, workforce shortage and others.
	Networks and organizations	This block is inspired from the Achterberg, Hinfelaar and Bocken [34]'s value hill. Furthermore, concept of circular business network and circular business network relationships were also included illustrated by Hofmann, Marwede, Nissen and Lang [17].
	(Tangible and intangible) ecosystem level activities	Inspired from Osterwalder and Pigneur [3]'s BMC but later included with the aspects mentioned by [40]. However, [40] did not mentioned it as part of the activities, which is revised in this canvas. Value co-creation and co-destruction aspects should also be considered under the block mentioned by [28]
	Channel—Communication	This building block is inspired from Daou, Mallat, Chammas, Cerantola, Kayed and Saliba [20] and Hamwi, Lizarralde and Legardeur [16] who identified associated building block communication and sales and communication channel, respectively.
	Channel—Recovery	Take-back aspects particular mentioned by [19], while Maria and Katri [42] highlighted reverse logistics issues. From there, this block is inspired.
	Channel—Distribution	Channel was mentioned by Maurya [39] and Osterwalder and Pigneur [3] highlighting the forward distribution channel.

Table A1. *Cont.*

Value Dimension	Building Block	Origin/Background
	Customer relationships and collaboration	Originally inspired from Osterwalder and Pigneur [3] which was later modified by Maria and Katri [42] as customer relationship and collaboration which is directly included as a building block in the canvas.
	Concept for unfair advantage	Inspired from the lean canvas by Maurya [39].
Value proposition (what value is provided and to whom?)	Unique circular value proposition	Value proposition is one of the core components of almost all the canvases. The original is from Osterwalder and Pigneur [3] which was later modified by several authors.
	Need/problem/challenges	"Problem" as a building block was mentioned by [39], which was later changed by [20]. Logically, this block should be started by a business while using the canvas described in this study.
	Targeted solution	Solutions was mentioned by [39].
	Characteristics of Product/service/features/performance	Inspired from the building blocks of characteristics of product service portfolio [46], service [88], product flexibility [16], service attribute [16], functional value [18]. However, the block proposed in the canvas has not been explicitly mentioned in any of the canvases.
	Customer/users/end-users/beneficiaries segments	Inspired from Osterwalder and Pigneur [3] called it as "Customer segment". Several authors then modified it according to the needs. For example, beneficiaries [54], users and customers [89]. All these aspects are consolidated in this block.
	Benefits and burden (customer, society, and environment)	Sustainability impacts (sustainability benefits) [42], environmental benefits [18], social benefits [18] and benefits and burden [15] were some of the inspirations developing the building block.
Value capture	Cost structure	Inspired from Osterwalder and Pigneur [3].
	Revenue stream	Inspired from Osterwalder and Pigneur [3].

Table A2. Description of the building block of "Circular business model value dimension canvas".

Value Dimension	Building Block	Description
	Circular economy goal and scope definition	This block tends to identify users'/businesses' circularity goals and intended R-strategies to be implemented in their organization, along with potential scope in terms of business operating cycle and alignment with CBM archetypes.
	Sustainability mission and action	Users will define their overarching sustainable development goals and their intention/plan for ESG reporting at present/in future.
Value creation and delivery	Key partners/stakeholders' involvement, relationship, and governance	This block encompasses all associated aspects of making business processes operational with the context of CE, CBM and circular supply chain concerning business partners, stakeholders, and the relationship among the actors.
	Key resources	This block represents the resources require to create the circular value proposition and aspects required to be a market leader.
	Key activities (internal business)	Key internal business activities such as procurement, maintenance, staffing, and others come under these aspects keeping in mind the R-strategies and CE principles.

Table A2. *Cont.*

Value Dimension	Building Block	Description
	Key matrices, CE analytics and data management	Performance assessment is a critical task for both large and small businesses. CE analytics, key metrics, and data management systems have become integral part where state-of-the-art technologies such as IoT, could computing is utilized for product as a service model. That is also true for resource recovery-type business models where resource hotspots, material flow, landfill avoidance, and reduced material use are some of the key performance parameters that could be used by a business.
	Circular design by adding value or retain value	In addition to value recovery, retaining value, optimal use by circular design, materials, and technologies required to create or retain such value is also included in this building block. Resource strategies (e.g., slowing, closing, regenerating, narrowing resource loop) are closely connected with the circular design and particular method of transformation which should be defined in this building block. Value retention and value addition could be two of the potential ways of value creation. In such aspect, material and technology play critical roles in selecting specific objective-driven paths (i.e., are we going to use existing technology or go for new technology and material development?)
	Risk assessment and management	This block represents the associated risk and potential mitigation measures against those risk for a business. Early identification of the potential market risk for commercialization as well as operational or any kind of financial risk could better help devising strategies around value creation. Risk management strategy both at internal business level and at ecosystem level could further be assessed and monitored as part of the business model innovation process.
	Networks and organizations	It defines a distinct set of entity that could help businesses move fast forward both in terms of providing funding support, startup inclusion and providing necessary contacts and innovation opportunity both at technological level as well as advisory level. These could be non-government, government organizations and their associated network that help business accelerate in their innovation process. Business association, CE business hub, circular platform, (regional) innovation hub could be some of the examples about that.
	(Tangible and intangible) ecosystem level activities	Business activities associated with the ecosystem should be mentioned here. This block is separated from the key internal activities as at ecosystem level activities, co-design/co-creation effort should be required. Material and informational exchange, supply chain activities are associated with the block. Here material could be tangible and information as intangible, thus this block is referred to as (tangible and intangible) ecosystem level activities.
	Channel—Communication	Communication both with customers and business stakeholders is an essential part of the value creation process. Motivating customers to return their used items in a return scheme or operational feedback via third party are some of the examples. This block would define communication strategy of a business across the supply chain partners including customers for the purpose of value creation.
	Channel—Recovery	In various types of business models, reverse supply chain is the main aspect, and it creates value to a business. That is why recovery channel was identified as critical component under channel.
	Channel—Distribution	This block represents the forward supply and distribution related channels.

Table A2. *Cont.*

Value Dimension	Building Block	Description
	Customer relationships and collaboration	It focuses on involving customers and nurturing collaboration throughout the value chain to drive innovation and loyalty. By adopting a customer-centric and collaborative strategy, businesses can foster innovation, increase customer loyalty, and expedite the shift towards circular and sustainable practices.
	Concept for unfair advantage	It emphasizes the development of a unique proposition that sets a company apart in the circular economy, fostering innovation, differentiation, and collaboration.
Value proposition (what value is provided and to whom?)	Unique circular value proposition	It highlights the importance of providing distinctive solutions that incorporate circular principles, positioning businesses as leaders in the circular economy.
	Need/problem/challenges	This block emphasizes the identification and understanding of market, societal, and environmental needs, problems, and challenges to drive the development of innovative circular solutions.
	Targeted solution	It emphasizes the development of targeted solutions that resolve identified needs, problems, and challenges while embracing circular principles. By incorporating circularity into product design, business models, technologies, and collaborations, businesses can develop solutions that promote resource efficiency, waste reduction, and overall sustainability.
	Characteristics of Product/service/features/performance	This block emphasizes the need to define and accentuate the attributes that make the offering sustainable, circular, and competitive. Businesses can differentiate themselves and contribute to a more sustainable and circular future by integrating characteristics such as sustainable materials, durability, closed-loop design, energy efficiency, and superior performance. Product lifecycle perspective particularly important in this block.
	Customer/users/end-users/beneficiaries segments	This block emphasizes the significance of identifying and comprehending the distinct categories of customers, users, or beneficiaries who will derive value from the circular offering. Businesses can drive the adoption of sustainable and circular practices by conducting extensive market research, segmenting the target audience, and customizing the circular solution to suit the needs of each segment.
	Benefits and burden (customer, society, and environment)	It focuses on assessing and understanding the impacts of a circular business model on customers, society, and the environment. It involves evaluating the positive outcomes and advantages that the model brings to customers, such as enhanced product value, improved user experiences, and increased access to sustainable solutions. Additionally, the building block addresses the potential burdens or challenges that may arise, including the need for behaviour change, higher upfront costs, or adjustments in existing systems and processes. Triple bottom lines are integrated in this block which then connected with the circular goal and scope definition and sustainability mission and action building block. Other forms of value capture can be considered as part of the benefits in this block.
Value capture	Cost structure	Understanding and managing the costs associated with implementing circular practices constitutes the "Cost Structure". It is necessary to consider both traditional and additional costs associated with the transition to a circular model.
	Revenue stream	The "Revenue Stream" building block entails identifying and developing revenue sources that align with circular and sustainable practices.

Table A3. Key questions under building blocks of the Circular Business model value dimension canvas.

Value Dimension	Building Block	Key Questions
	Circular economy goal and scope definition	- No questions included. Users will select according to their scope and goals in life with the CE principles and strategies
	Sustainability mission and action	- No questions included.
Value creation and delivery	Key partners/stakeholders' involvement, relationship, and governance	- Who are our key partners? - Who are our key suppliers? - How do we maintain and manage effective relationship with our partner and suppliers within the network following a flexible governance structure?
	Key resources	- What key resources do our circular value proposition require?
	Key activities (internal business)	- What are the internal business activities we need to perform to make business model success?
	Key matrices, CE analytics and data management	- How do we assess performance using data and manage data for future decision-making?
	Circular design by adding value or retain value	- What materials and technologies can we use to create or retain value?
	Risk assessment and management	- What are the risks involved with our value proposition and value creation stages? - How to assess and manage risk of our business?
	Networks and organizations	- How can we design and utilize physical, digital, and virtual networks/organizations to optimize the circular value chain for our product/service?
	(Tangible and intangible) Ecosystem level activities	- What kind of activities do partners' ecosystem perform? - What kind of resources are we acquiring from partners' ecosystem?
	Channel—Communication	- How do we communicate with our customers, partners, and stakeholders?
	Channel—Recovery	- How do we communicate partners within recovery/return value chain? (If any)
	Channel—Distribution	- Through which channel our product/service are delivered to customers in a most cost-effective way?
	Customer relationships and collaboration	- What type of relationship do our customer segments expect us to establish and maintain, and how can we integrate them into our business model?
	Concept for unfair advantage	- What is the advantage using or adopting our product/service that nobody is providing?
Value proposition (what value is provided and to whom?)	Unique circular value proposition	- What value do we deliver to the customer based on circular economy principles and strategies? - Which customers' needs are we satisfying?
	Need/problem/challenges	- Which problems of the customers are we targeting from the aspects of circularity and sustainability?
	Targeted solution	- What type of solutions do we want to provide by our value proposition to customers/each segment of customers?
	Characteristics of product/service/features/performance	- What are key characteristics our product/service (in terms of newness, performance, customization, design, brand/status, etc.). - How do we manage the product lifecycle of our product/service, including maintenance, return and recovery?
	Customer/users/end-users/beneficiaries segments	- For whom are we creating value? - Who are our most important customers?

Table A3. *Cont.*

Value Dimension	Building Block	Key Questions
	Benefits and burden (customer, society, and environment)	- What kind of benefits will our product/service create on customers, society, and environment? What kind of burden will our product product/service create on customers, society, and environment?
Value capture	Cost structure	- What are the costs associated with the value creation, value proposition and value delivery?
	Revenue stream	- What is the value proposition that our customers are willing to pay for? Are there any potential revenue streams that have not yet been tapped into?

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