Truly Sustainable Business Models

Ideal Types for Sustainable Production and Consumption

D I S S E R T A T I O N
of the University of St. Gallen,
School of Management, Economics,
Law, Social Sciences, International
Affairs, and Computer Science (HSG)
to obtain the title of
Doctor of Philosophy in Management

submitted by

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Dissertation no. 5200

Difo Druck GmbH, Untersiemau 2022

The University of St. Gallen, School of Management, Economics, Law, Social Sciences, International Affairs and Computer Science, hereby consents to the printing of the present dissertation, without hereby expressing any opinion on the views herein expressed.

St. Gallen, October 29, 2021

The President:

Prof. Dr. Bernhard Ehrenzeller

To my parents.

Acknowledgements

I am beyond grateful for the many people who accompanied and encouraged me on my journey.

First and foremost, I want to thank my supervisor Prof. em. Dr. Thomas Dyllick for his patient guidance and support, for channeling my many ideas into the right direction, and for encouraging me to think "outside-in". I also want to thank my co-supervisor Prof. Dr. Karolin Frankenberger for her valuable feedback and insights.

I want to extend my gratitude to my interview partners who took the time to share their extensive knowledge and critically reflect on my findings. Furthermore, I thank my case study partners for sharing their inspiring stories and insights with me, and the Oxara project team at Student Impact for providing feedback on the initial drafts of my framework. I also want to thank my editor who helped me improve my writing and had a keen eye on even the small details of the thesis.

Being part of the IWÖ team for over five years has been a pleasure and I want to thank my colleagues for the encouragement and of course the many uplifting "Znünis".

I am grateful for my friends who offered their moral support and much-needed distractions during that stressful time.

My family, especially my parents, supported me unconditionally throughout my education and beyond. Thank you for always having my back!

Finally, and with all my heart, I thank my partner Urs, for his love, support, and understanding – I am looking forward to the many adventures to come.

Bern, July 2021 Fiona Stappmanns

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List of Abbreviations

CO_2	Carbon Dioxide
CSV	Creating Shared Value
EU	European Union
FMCG	Fast Moving Consumer Goods
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GVC	Global Value Chain
NGO	Non-Governmental Organization
SBM	Sustainable Business Model
SDG	Sustainable Development Goal
SPC	Sustainable Production and Consumption
TBST	True Business Sustainability
TSBM	Truly Sustainable Business Model
TSS	Truly Sustainable Strategy
UN	United Nations
UNEP	United Nations Environmental Programme

Abstract

Humanity is facing unprecedented challenges: climate change, biodiversity loss, pollution, and social inequality are threatening the health of the planet and us humans. Businesses play a prominent role both as a cause and as a solution to these problems. Yet there is an imbalance between sustainability actions at the corporate level and their impact on solving sustainability problems at the macro level.

This thesis proposes truly sustainable business models to overcome this "big disconnect". They are based on the concept of true business sustainability by Dyllick and Muff (2016), which is grounded on two pillars. First, sustainability serves as a starting point for businesses. Second, the focus is on creating positive societal value rather than aiming to minimize unsustainable impacts.

The thesis identifies six characteristics of truly sustainable business models. These characteristics sketch an ideal picture of truly sustainable business models that can serve as inspiration for sustainability efforts. Three case studies illustrate and concretize the ideal types of truly sustainable business models. They are intended to serve as examples showing that positive change is possible and that economically viable solutions simultaneously creating value for the common good already exist.

Thus, the work contributes to the expansion of the scientific discourse on sustainable business models and true business sustainability. Furthermore, it demonstrates on a practical level how truly sustainable business models can foster sustainable development and the transformation of our current economic system toward a sustainable future.

Zusammenfassung

Die Menschheit steht vor nie dagewesenen Herausforderungen: Klimawandel, Biodiversitätsverlust, Verschmutzung und soziale Ungleichheit bedrohen die Gesundheit des Planeten und von uns Menschen. Unternehmen spielen als Ursache jedoch auch als Lösung dieser Probleme eine herausragende Rolle. Dabei besteht ein Ungleichgewicht zwischen den Nachhaltigkeitsmassnahmen auf Unternehmensebene und deren Auswirkungen auf die Lösung von Nachhaltigkeitsproblemen auf Makroebene.

Die vorliegende Arbeit schlägt *echt nachhaltige Geschäftsmodelle* zur Überwindung dieses «Big Disconnect» vor. Sie basieren auf dem Konzept der echten unternehmerischen Nachhaltigkeit von Dyllick und Muff (2016) und beruhen genau wie echte unternehmerische Nachhaltigkeit auf zwei Säulen. Zum einen steht die Lösung von Nachhaltigkeitsherausforderungen am Beginn unternehmerischen Handelns. Zum anderen liegt der Fokus auf dem Schaffen von positivem gesellschaftlichem Nutzen, anstatt eine Minimierung nicht-nachhaltiger Auswirkungen anzustreben. Die Arbeit identifiziert sechs Eigenschaften von echt nachhaltigen Geschäftsmodellen. Diese Charakteristika entwerfen ein Idealbild von Geschäftsmodellen, die gezielt Nachhaltigkeitsherausforderungen adressieren und als Inspiration für Nachhaltigkeitsbestrebungen dienen können. Drei Fallstudien illustrieren und konkretisieren die aufgezeigten Idealtypen echt nachhaltiger Geschäftsmodelle. Sie sollen als Beispiele dienen, die verdeutlichen, dass positiver Wandel möglich ist. Sie zeigen, dass Lösungen, die sich wirtschaftlich lohnen und gleichzeitig gesellschaftlichen Wert schaffen, bereits existieren.

Damit trägt die Arbeit zur Erweiterung des wissenschaftlichen Diskurses zu nachhaltigen Geschäftsmodellen und echter unternehmerischer Nachhaltigkeit bei. Ferner zeigt sie auf praktischer Ebene, wie echt nachhaltige Geschäftsmodelle nachhaltige Entwicklung und die Transformation unseres derzeitigen Wirtschaftssystems hin zu einer nachhaltigen Zukunft fördern können.

1 Introduction

The introduction is divided into three parts. Section 1.1 establishes the context and motivation to set the stage and illustrate the research problem. Furthermore, the basic concepts are introduced. Section 1.2 elaborates the research need and section 1.3 introduces the research questions as well as the research aim. Lastly, section 1.4 gives an overview of the dissertation and its structure.

1.1 Context and Motivation

Four sections establish the context and motivation of this thesis. The big disconnect, a mismatch between actions on the business and on the macro level, is the starting point of this section as well as this thesis. The next part elaborates on business' responsibility and ability to address sustainability challenges, especially in the context of sustainable production and consumption (SPC). The role of business models to transform the current paradigm is the subject of the third section. The last section introduces true business sustainability (TBST) as the foundation of this thesis.

1.1.1 The Big Disconnect

> *"At least 1m people facing starvation as Madagascar's drought worsens"*
>
> The Guardian, May 10, 2021 (Ahmed & Razafison, 2021, para. 1).

> *"Crushing heat wave in Pacific Northwest and Canada cooked shellfish alive by the millions"*
>
> The Washington Post, July 8, 2021 (Westfall & Coletta, 2021, para. 1).

These headlines are just the tip of the (melting) iceberg. Extreme weather events attributed to anthropogenic climate change are increasingly more common (Pidcock & McSweeney, 2021). The past seven years have been the hottest years in modern record keeping, with 2016 and 2020 sharing first place, as planet

Earth is trapping unprecedented amounts of heat (Bekiempis, 2021; Brown, 2021). Some regions of the world, like parts of the Middle East or North Africa, may even become uninhabitable, causing a stream of climate refugees (Max-Planck Gesellschaft, 2016). Even if the goals of the Paris Agreement are reached, tipping points such as melting permafrost or deforestation of the Amazon might make it impossible to limit global warming to 2°C or less, causing inevitable changes to the planet (Gatti et al., 2021; Steffen et al., 2018). However, climate change also affects other sustainability challenges. It is one of the main drivers for biodiversity loss, a challenge which might impact humanity as much as climate change (Watson, 2019). In general, risks associated with environmental degradation like climate action failure, biodiversity loss, or the natural resource crisis were rated as most critical in the long term by business leaders (WEF, 2021b).

At the same time, environmental and social challenges are closely interlinked. Climate change affects the marginalized and disadvantaged disproportionately more, both within and across countries, leading to growing social and economic inequality (Diffenbaugh & Burke, 2019; Islam & Winkel, 2017).

The time to address those challenges is running out (Messerli et al., 2019). The United Nations (UN) has called for the "decade of action" to find solutions to achieve the Agenda 2030 and businesses are responding (UN, 2021b). For example, a 2016 study located the CSR in the top five priorities of CEOs (BSR & GlobeScan, 2016). Sustainability professionals consider climate change and human rights as the most important topics to be addressed by businesses (BSR & Globescan, 2017). Consequently, even companies like Apple are committing to carbon neutrality, the technology company is aiming for a carbon neutral supply chain and products by 2030 (Rafi, 2021). And while 90% of executives think that sustainability is crucial for a competitive advantage, only 60% of companies have implemented a sustainability strategy (Unruh et al., 2016). Integrating sustainability at the core of a company still represents a challenge (BSR & Globescan, 2019).

Despite the increasing efforts of businesses to engage in sustainability management, the overall state of the planet is deteriorating. This phenomenon of a mismatch between the popularity of sustainability management on the company level and the disastrous ecological and social indicators on a macroeconomic level is referred to as the "big disconnect" (Dyllick & Muff, 2016; Whiteman, Walker, & Perego, 2013). There are several reasons for this phenomenon, most importantly a missing integration of the micro and the macro level of sustainability (Dyllick & Muff, 2016). Furthermore, a focus on what authors call weak sustainability, meaning a reduction of unsustainability instead of an increase in sustainability, adds to the disconnect (Landrum, 2017).

As a solution to bridge this gap, Dyllick and Muff (2016) suggest that companies need to adopt an *outside-in* approach when integrating sustainability into their business. This approach means switching the perspective from reducing the negative impact of the company and focusing on how it can improve its environmental and social performance to create a positive impact for society. Companies must take societal challenges as a starting point to develop a business solution, regarding them as business opportunities in disguise. Such a transformation does not just call for a slight adjustment, but a new dominant logic, regime, or paradigm of doing business.

Despite the devastating effects the COVID-19 pandemic had on human well-being, it also demonstrated how collective action taken by governments, businesses, and civil society can address a problem in a very short time. Furthermore, how we build back from the pandemic will shape the path for sustainable development in the future; in this regard, socio-political shocks may serve as opportunities for sustainable transformations (Herrfahrdt-Pähle et al., 2020).

A growing consensus in academia and practice acknowledges the importance, responsibility, and ability of the business sector to contribute to solving these challenges.

1.1.2 The Role of Businesses and Sustainable Production and Consumption

Multinational corporations yield immense social, political, and economic power (Schneider et al., 2020). They employ people, influence decisions and generate revenue that is, in some cases, equal or even greater than the revenue of the world's richest countries (Babic, Heemskerk, & Fichtner, 2018). Many of humanity's sustainability challenges are partly caused by unsustainable production and consumption of goods and services (Bengtsson, Alfredsson, Cohen, Lorek, & Schroeder, 2018). Mass production and consumption lead to an overuse of resources and to pollution. At the same time, social dimensions of sustainability challenges often result from unequal access to resources or the failure to satisfy even basic human needs.

Although businesses are not solely responsible for the sustainability challenges humanity is facing today, they hold an important role both as a cause and a solution (Dyllick & Muff, 2017). However, in order to tackle those challenges, incremental change is not enough. Instead, a radical new approach to business and a new economic paradigm are needed (Elkington, Lim, & Smith, 2016) to "achieve a good life for everyone within the constraints of the Earth's biophysical capacity" (Bengtsson et al., 2018, p. 1534).

1.1.3 Sustainable Business Models

To induce such a radical transformation, changes in processes and products are not enough and might in fact do more harm than good due to rebound effects (Wells, 2013). The UN demands reimagining finance and business models to enable sustainable development (UN, 2021a). Business models are an instrument and facilitator to change the economy's dominant logic or regime (Gassmann, Frankenberger, & Csik, 2017; Gassmann, Frankenberger, & Sauer, 2016).

Two properties of the business model make it an interesting unit of analysis for the context of sustainability: 1) a network perspective and 2) a focus on value creation. First, the business model adopts an integrated, system-level

perspective as it goes beyond the boundaries of a single company, also incorporating the value network and other stakeholders such as customers (Wirtz, Pistoia, Ullrich, & Göttel, 2016). The business model is a way to integrate sustainability into the core of a company and transform the whole business network it operates in (Bocken, Short, Rana, & Evans, 2014; Stål, 2018). Second, the business model explicitly focuses on how value is created by a company and its stakeholder network (Lozano, 2018; Teece, 2010).

While a traditional[1] business model only aims to create economic value, a sustainable business model (SBM) adds a measurable ecological and/or social dimension to the creation of economic values (Boons & Lüdeke-Freund 2013). While there is no comprehensive conceptualization of an SBM, common themes of describing the characteristics evolve around such a broader understanding of value, the consideration of a wide range of stakeholders, or the integration of sustainability at the core of the business model.

A study by Kiron et al. (2013) found that almost 50% of companies engaging in sustainability activities altered their business model, indicating the importance of business models for a sustainable transformation. For the case of altering traditional business models, evidence was found that every new business model is in fact just a recombination of different, reoccurring patterns (Gassmann et al., 2017). Such a pattern can serve as a blueprint or design guideline for business model innovation. This popular approach of business model patterns was also transferred to the context of SBMs (see Bocken et al. [2014]; Clinton and Whisnant [2014]; Lüdeke-Freund, Carroux, Joyce, Massa, and Breuer [2018]). Examples of such patterns range from closing-the-loop models to encouraging sufficiency or buy-one-give-one models.

[1] Traditional as opposed to a sustainable business model.

1.1.4 True Business Sustainability

This thesis builds on the concept of TSBT by Dyllick and Muff (2016). Starting from a *business-as-usual* scenario, where companies focus on shareholder value maximization, Dyllick and Muff (2016) distinguish between three stages of business sustainability, each representing a shift in *concerns*, of the *values created*, and of the *organizational perspective*.

Business Sustainability 1.0: As the first step toward TBST, business sustainability 1.0 is also characterized as "refined shareholder value management" (p. 163). Businesses realize new challenges by managing risks and opportunities. While the concerns move from purely economic to three-dimensional concerns along the triple bottom line, the organizational goal is still a maximization of profits.

Business Sustainability 2.0: The next step in this typology is defined as "managing for the triple bottom line" (p. 164). Value is created for a broader set of stakeholders by deliberately addressing their specific needs under the consideration of social and environmental goals and measurements. Although it is a big progress from the previous step, business sustainability 2.0 still takes an inside-out perspective on sustainability (Dyllick & Muff 2016).

Business Sustainability 3.0/TBST: Only truly sustainable businesses effectively address sustainability challenges and contribute to sustainable development. This contribution is possible due to two distinct characteristics of TBST: 1) the *adoption of an outside-in perspective* and 2) focusing on *positive value contribution for the common good*. First, switching the organizational perspective from an inside-out to an *outside-in* approach means to regard sustainability challenges as business opportunities. Second, instead of seeking to reduce the company's negative impacts, a truly sustainable business creates significant and effective positive impact toward solving sustainability challenges on a macroeconomic level. In a TBST setting, values are not created for the triple bottom line but for the common good (Dyllick & Muff, 2016).

The seminal paper by Dyllick and Muff from 2016 was cited 551 times as of July 11, 2021, reflecting the wide response to and impact of the paper. Several

authors extend the concept and refine the understanding of TBST in a variety of contexts. Landrum (2017) for example takes up the restricted understanding of corporate sustainability, identified by Dyllick and Muff (2016) as one cause for the disconnect, and broadens the concept to establish stages of corporate sustainability that go beyond the business case of sustainability, thereby creating an understanding built on principles of strong sustainability. Landrum (2017) calls for a reintegration of business with the natural world and a new economic model that recognizes the physical limits of our planet.

Dyllick and Muff (2017) extend their concept by introducing eight characteristics of truly sustainable companies in the areas of engagement, primary focus, market definition and positioning, products and services, governance and leadership, type of CEO, organization, and sustainability reporting. In a critical reflection of the concept, Moratis and Melissen (2020) stress the importance of focusing on societal value creation and explain three types of intelligence that are needed to transition toward TBST: naïve, native, and narrative.

Other authors extend TBST to different contexts: Dyllick and Rost (2017) conceptualize TBST for products and services, characterizing product sustainability 3.0 as a "directed and deliberate contribution to solving relevant societal issues" (p. 356). Caviezel (2018) develops an application-oriented model to integrate what she refers to as "effective"[2] business sustainability. She finds: "sustainability is reflected at all levels of a company and is firmly anchored as a solid component of the overall business model" (p. 51, own translation). Furthermore, Caviezel (2018) concludes that sustainability is also an integral part of a company's strategy.

Bereuther (2021) illuminates how the concept of TBST transfers to strategies, reacting to the call by Dyllick and Muff (2016) and the necessity of a "fundamentally different strategic approach" (Dyllick & Muff, 2016, p. 170). She

[2] She uses the term "effective" synonymously with "TSBT".

conceptualizes truly sustainable strategies (TSS) as "proactive and collaborative strategies designed to deliver positive contributions to societal challenges and to initiate radical system-wide changes toward sustainability by using business' core competencies" (Bereuther, 2021, p. 135). Apart from defining seven characteristics of TSS, she also identifies four specific strategic types: 1) optimizing existing strategies, 2) engaging with the supply chain, 3) innovating products and services, and 4) rethinking business models. Bereuther (2021) places the strategy of innovating business models at the highest level of the TSS portfolio, yielding the highest potential value for business as well as society. This placement within the portfolio of strategies emphasizes the importance of business models for sustainable transformations that both generate value for businesses as well as society. Moreover, the work by Bereuther (2021) demonstrates the interconnectedness of strategies and business models.

1.2 Research Need

This research is motivated by challenges identified in practice following a phenomenon-driven research as called for by Sharma (2019), among others, as well as gaps derived from the literature. The *big disconnect* (Dyllick & Muff, 2016; Whiteman et al., 2013) – a mismatch between sustainability efforts on the company level and the state of the planet – serves as a starting point for this research. To address this disconnect, "approaches that effectively link both levels" are needed (Dyllick & Muff, 2016, p. 158).

This thesis proposes SBMs as a tool to connect the macro with the company level and thus bridge the big disconnect using two features of SBMs: their focus on value and the adoption of a network perspective. However, the current understanding of SBMs suffers from several shortcomings. Those shortcomings must be addressed before conceptualizing business models that can contribute toward sustainable development. 1) The underlying understanding of sustainability needs to be redefined across the three dimensions of a new view

on sustainability, company purpose and value creation, and company success. 2) A clear and coherent conceptualization of what a sustainable business model looks like is needed. Scholars underline the need for a "conceptual clarification of the SBM at hand – including a depiction of the respective broader systemic sustainability value created, delivered, and captured" (Rauter, Zimek, Baumgartner, & Schöggl, 2019, p. 257) and call upon a "more robust conceptualization of sustainability and sustainable business models" (Dentchev et al., 2018, p. 700). 3) Current approaches of SBMs still adopt an inside-out perspective on sustainability, focusing on companies' impacts on sustainability rather than their possible contribution toward sustainable development. The currently missing link between SBMs and sustainable development could be established by integrating the concepts of SBMs and TBST, conceptualizing a truly sustainable business model (TSBM). However, what such an approach could look like is still unclear. Characteristics and types of strategies for TBST have been established by Bereuther (2021) through a conceptualization of TSS. While the strategic implication of an outside-in perspective is therefore well researched, the understanding of and outside-in perspective for business models needs to be defined. 4) The potential impact of a truly sustainable business varies with the context (Dyllick & Muff, 2016). Therefore, an alternative to the context-independent pattern approach is needed for this setting.

SPC are a part of sustainable development that is particularly important for businesses and set the context of this dissertation. However, companies struggle to effectively contribute toward solving societal challenges (Baumgartner & Rauter, 2017). 5) Consequently, concrete guidance or effective tools that connect value creation for society and businesses are required (PwC, 2015; Randers et al., 2018; Scott & McGill, 2018).

1.3 Research Questions and Aim

This section introduces the research questions and the overarching goal of this thesis.

The research is guided by the overarching question of *"What do truly sustainable business models look like that effectively contribute to solving sustainability challenges"*.

Two sub-questions structure the research process:

RQ1: How can a truly sustainable business model be conceptualized?

> The first research question aims to identify characteristics of TSBMs and establish an understanding of what a TSBM looks like. This question connects to the first three research needs identified in the previous section: 1) a new view on business sustainability, 2) the need for a coherent conceptualization of SBMs, and 3) a necessary integration of the outside-in perspective into business models.

RQ2: What are ideal types of truly sustainable business models for sustainable production and consumption?

> The second research question has the goal of illustrating possible ideal types of TSBMs for SPC. It connects to the last two research needs identified in the previous section: 4) the need to establish a context-dependent *ideal type* instead of a context-independent pattern for TSBM, and 5) to offer possible, concrete approaches to how companies can address sustainability challenges caused by unsustainable production and consumption.

This thesis follows the call for academia to "engage in the quest for, and envisioning of, alternative economic paradigms that safeguard the needs of all people, promote a less unequal world and ensure the re-entering of a safe operating space for humanity" (Schneider et al., 2020, p. 491). It proposes TSBMs as a tool to change the current economic paradigm, to reconnect companies with macro-level sustainability challenges, and to help bridge the big disconnect.

From a theoretical standpoint, the TBST typology established by Dyllick and Muff (2016, 2017) builds the foundation of this thesis, which connects to the literature and evolving discourse around the topic of TBST (e.g., Bereuther

[2021]; Dyllick and Rost [2017]; Moratis and Melissen [2020]) and aims to extend its understanding to the field of business models. Additionally, it connects to the conversation on SBMs and further develops the understanding of how SBMs, respectively TSBMs, can be conceptualized in a comprehensive manner (Dentchev et al., 2018; Rauter et al., 2019).

From a practical standpoint, the ultimate aim is not only to deepen the understanding on an academic level but also to provide businesses with a practice-oriented concept to effectively address sustainability challenges and make a contribution to sustainable development. By explicitly connecting business models with sustainability impacts on a macro level, TSBMs can inspire and guide companies on their sustainability journey. The characteristics can also serve as a benchmark, guideline for improvement, and ultimate goal for business sustainability. Ideal types can serve as orientation and inspiration to illustrate what is possible and show examples of how sustainability challenges can be approached through business solutions. By illustrating concrete approaches for SPC, this thesis also answers calls to contribute toward addressing sustainability challenges through management research (Dyllick & Muff, 2016; George, Howard-Grenville, Joshi, & Tihanyi, 2016).

1.4 Structure of the Dissertation

This dissertation consists of seven chapters. Chapter 2 provides an overview of existing knowledge and literature. Chapter 3 elaborates the methodological approach as well as the research process and methods. The findings of the thesis are presented in chapters 4, 5 and 6. Chapter 4 analyzes three distinct challenges of SPC. Chapter 5 conceptualizes TSBMs by analyzing the characteristics of a TSBM and how this reflects in the business model elements. It introduces the truly sustainable business model petal as a framework of TSBMs. Finally, chapter 6 illustrates TSBMs by introducing ideal types that effectively address the three sustainability challenges introduced in chapter 4 and demonstrating how such ideal types could work in practice through three case studies. Finally,

chapter 7 discusses the findings, contributions, limitations, and further research opportunities.

2 Literature Analysis

Chapter 2 analyzes the literature in order to identify the research gaps and to provide a critical view on what has been missing in the discussion about sustainable development, business sustainability, and SBMs so far.

The chapter is divided into three parts. Section 2.1 takes a macro perspective and elaborates the role of businesses for sustainable development. It describes the most important sustainability challenges and provides an overview of where we stand in responding to them. SPC serve as an example an area that is especially important for businesses that want to address sustainable development. The section closes by pointing out the need to change current perspectives on sustainable development and to integrate businesses with nature and society.

Scholars call for a different view on business sustainability to tackle the grand sustainability challenges (e.g., Dyllick & Muff, [2016]; Landrum, [2017]). Hence, the literature on sustainable business serves as a starting point in identifying the possible traits of such a company.

Chapter 2.2 describes the necessary steps for changing this perspective at the business level. Change is necessary in three regards: perspective, company purpose and value creation, and measures of success. Lastly, the section proposes the concept of TBST as a new perspective for businesses to address sustainability challenges.

Chapter 2.3 introduces business models as a unit of analysis for this thesis and the proposed instrument to transform our economy toward sustainable production and consumption patterns. It shows why current approaches still follow an inside-out approach and are still mostly focused on profit as their main purpose. Furthermore, the need to properly conceptualize an SBM is established. Business model patterns are a popular instrument to inspire change in companies and sustainable versions of those patterns have been identified. Yet, those patterns are context-independent, whereas the potential impact of

TSBMs varies depending on the context. Furthermore, they do not consider the potential effectiveness to address sustainability challenges and their understanding of sustainability stays rather fuzzy.

Figure 1 shows the current view of the SBM impact chain. Due to an inside-out perspective and a focus on reducing the negative instead of enhancing the positive, these business models do not contribute toward more sustainable production and consumption systems. Consequently, they also do not sufficiently contribute toward solving the sustainability challenges of our time.

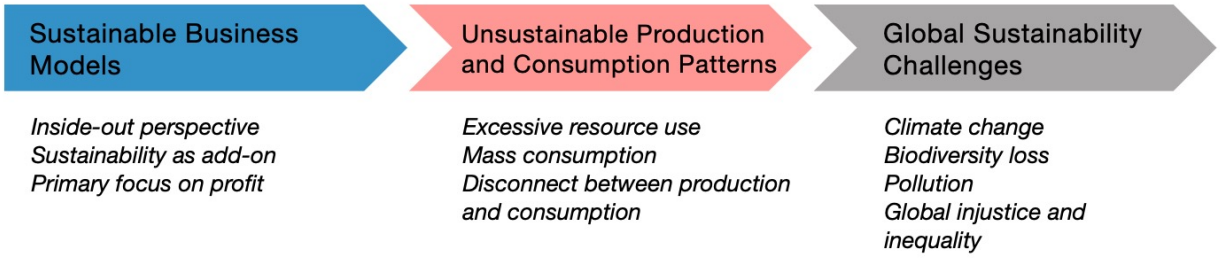


Figure 1: Impact chain of SBMs: current view, source: own depiction

Overall, chapter 2 sheds light on current developments in sustainable development and SPC and outlines the approaches toward business sustainability and sustainable business models. It identifies causes for the big disconnect and points out the research needs this thesis builds on.

2.1 The Significance of Business for Sustainable Development

Humanity is confronted with various sustainability challenges such as climate change, biodiversity loss, pollution, or inequality. This section aims to shed light on those challenges and to show approaches for sustainable development, such as the Sustainable Development Goals (SDGs), by using four sustainability challenges as an illustration: climate change, biodiversity loss, pollution, and global inequality. Furthermore, this section points out why current approaches to tackling sustainability challenges are inadequate to bringing about necessary change. It builds on the argument that transformations will only be triggered if we shift our perspective on sustainability.

An overview of the challenges is given, and current developments are addressed in Section 2.1.1, and an analysis of the challenges that businesses face in taking on responsibility for the challenges and in influencing them is conducted in Section 2.1.2. I then propose a change in perspective and argue that business should be viewed as a solution to sustainable development rather than as a problem. SPC are introduced as one part of sustainable development that is especially relevant for businesses.

2.1.1 What is Sustainable Development?

Sustainable development usually refers to "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland 1987, p. 37). This widely used and cited definition hinges on two main underlying concepts: a focus on human needs and intergenerational justice. Basic human needs encompass food, water, warmth, or safety (McLeod, 2018). In terms of intergenerational justice, others have expanded its definition to include a "just allocation of resources between people and planet, between different parts of the world, and between future and current generations" (Holden & Linnerud, 2016, p. 304). This expanded definition focuses on the allocation of resources between society and the environment and on equality between different societies and countries, such as the Global North and South.

2.1.1.1 *Sustainability Indicators: The UN's SDGs*

These sustainability goals are given a concrete form by the UN's SDGs. The implementation of the Agenda 2030 and the 17 SDGs in 2015 put sustainable development center stage of the international agenda (see figure 2). Those goals range from ending poverty and hunger to stopping biodiversity loss, creating more sustainable cities, and creating sustainable consumption and production patterns (UN, 2015).



Figure 2: Overview of the 17 SDGs, source: UNDP (2021, fig. 1)

The goals are further divided into 169 targets, and each target lists specific indicators to measure progress. Unlike prior initiatives, such as the Millennium Development Goals (MDGs), the SDGs explicitly call on the business sector to engage in sustainable development (GRI, UN Global Compact, & WBCSD, 2015).

The goals aim to balance social, environmental, and economic development and are interconnected and dependent on each other (UNDP, 2021). Action for one goal might positively or negatively affect another goal (Nilsson, Griggs, & Visbeck, 2016; UN, 2019a). In particular, the topic of sustainable and healthy food is either directly or indirectly connected to all 17 goals (Stockholm Resilience Centre, 2016). For example, SDG 2, no hunger, entails targets to ensure sustainable food systems and resilient agricultural practices. A reference to such a sustainable food system also exists in the targets for SDG 12, responsible consumption and production, to reduce food waste (UN, 2021d, 2021c). Most of the trade-offs exist between social and environmental goals (UN, 2019a). This interconnection of the SDGs reflects the complexity and systemic character of sustainability challenges faced by our societies.

The establishment of the goals triggered a response from bodies as diverse as civil actors, businesses, and governments, and for the first time, the private sector was actively engaged in discussions about sustainable development. A

survey found that, immediately after the goals were announced, 71% of businesses were already thinking about how to respond to the SDGs (PwC, 2015). The same study also showed that only 13% of those businesses had identified the tools necessary to respond. Today, instruments like the SDG compass (GRI, UN Global Compact, & WBCSD, 2021) or the SDG action manager (B-Lab & UN Global Compact, 2020) provide first insights on business actions on the SDGs. However, guidance is needed from a business and business model perspective on addressing sustainability challenges that go beyond the often efficiency focused SDGs (see 2.1.3.3).

2.1.1.2 *Sustainability Indicators: Alternative Models*

Several approaches determine humanity's impact on the planet and show how to make it a safe space for us. For the state of the environment, the planetary boundaries approach aggregates sustainability challenges into nine distinct *planetary boundaries* (Rockström, Steffen, Noone, Persson, Chapin, et al., 2009; Steffen et al., 2015). It is a first attempt to quantify both the state of the planet and to set certain limits that cannot be crossed without irreversible damage to the system. Some boundaries have already been breached, i.e., for the rate of biodiversity loss, the nitrogen cycle, and climate change, while some boundaries, like chemical pollution, i.e., waste, have yet to be determined (Steffen et al., 2015). The framework has been criticized for not displaying the interactions between the different boundaries (Stockholm Resilience Centre, 2019). But, together with other measures such as the ecological footprint, the planetary boundaries approach establishes a way of determining absolute thresholds for human existence.

Some researchers have expanded the concept of the planetary boundaries by a social dimension (Leach, Raworth, & Rockström, 2013; Raworth, 2012, 2018). The social boundaries determine a minimal threshold of social development for areas such as water, income, health, social equity, education, or resilience. The concept draws a "safe and *just* space for humanity" with a minimal threshold for social and a maximum threshold for environmental boundaries, called the

"doughnut." It also acknowledges the interconnectedness of the well-being of nature and humans, for example, environmental degradation can lead to poverty and vice versa.

Such an integrated understanding is also reflected in a model called the "wedding cake," depicting economy and society as embedded into the biosphere (see figure 3). The framework combines the logics of the planetary and societal boundaries with the SDGs. This perspective symbolizes a changed paradigm, moving away from a sectoral understanding of economy, society, and environment treated as separate entities to "a world logic where the economy serves society so that it evolves within the safe [and just] operating space of the planet" (Stockholm Resilience Centre, 2016, para. 3).

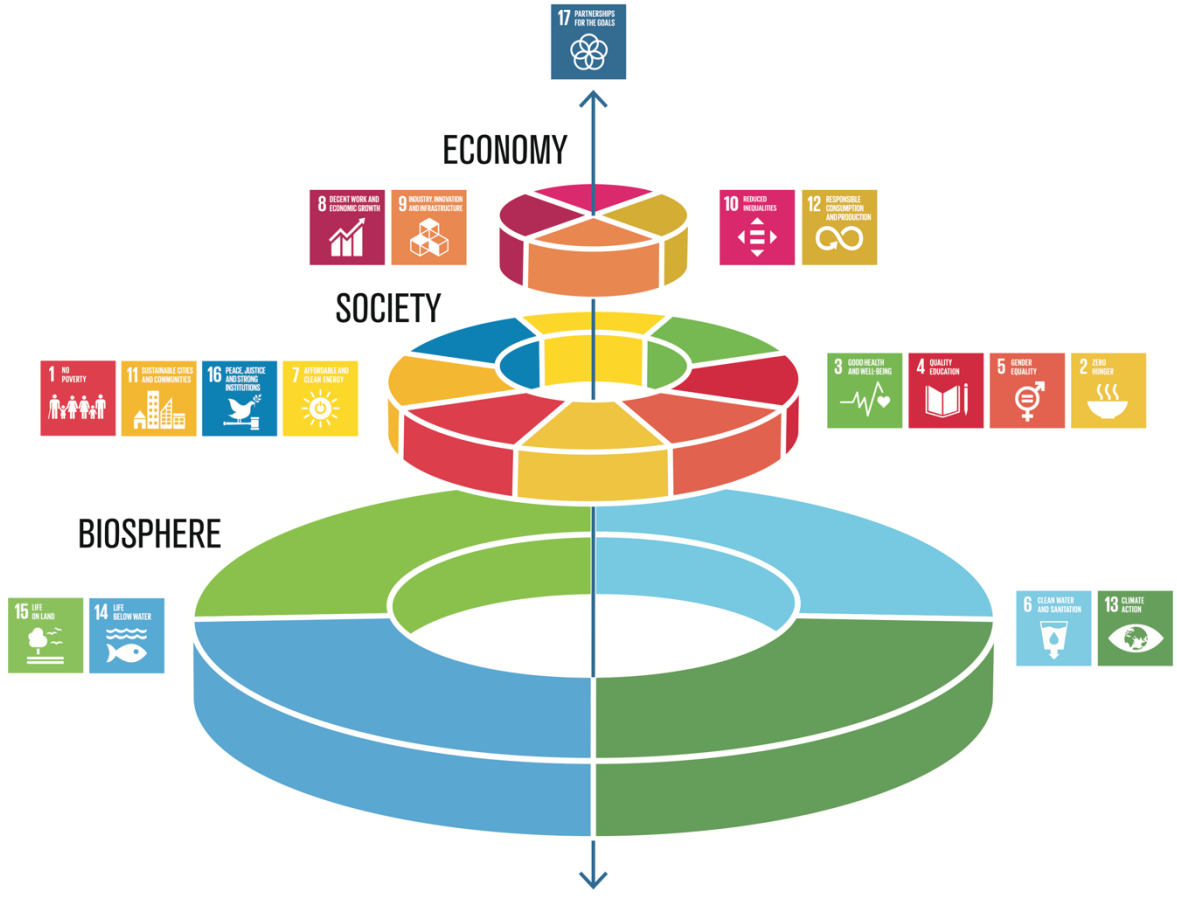


Figure 3: The SDG "wedding cake:" economy and society as embedded parts of the biosphere, source: Stockholm Resilience Centre (2016, fig. 1)

2.1.1.3 *Current State of Sustainability*

Despite the considerable resonance triggered by the SDGs, indicators point to a shortfall of achieving the goals in time (Messerli et al., 2019; UN, 2019a; UNEP, 2021c; WBCSD, 2021). We are not complying with the goals of the Paris Agreement, and biodiversity loss and pollution are accelerating while global inequality is growing.

2.1.1.3.1 Climate Change

Over the past decade, carbon dioxide emissions were steadily growing around 1% per year (Le Quéré et al., 2020; UNEP, 2020). In 2020, global emissions fell by 6.4% compared to the previous year due to the pandemic, a decline equal to twice the total emissions of Japan (Tollefson, 2021). The transport sector was most affected by the pandemic and consequently the most significant savings in emissions came from reduced mobility (Le Quéré et al., 2020; Volcovici, 2021). For example, emissions from aviation were reduced by 48% compared to the previous year (Tollefson, 2021). But this development is neither long-lasting, as emissions are predicted to bounce back once the pandemic is over, nor enough to keep the temperature rise below 1.5°C (Tollefson, 2021; UNEP, 2019a, 2020). Currently, we are on a path to a warming of over 3°C, with an annual reduction of 7.6% each year over the next decade needed to meet our goals (UNEP, 2019a). The actions taken to recover from the effects of the pandemic will determine the trajectory for climate action in the following decades (Le Quéré et al., 2020).

2.1.1.3.2 Biodiversity Loss

Collapsing ecosystems threaten one-fifth of countries and we are losing species at an unprecedented rate (Retsa, Schelske, Wilke, Rutherford, & de Jong, 2020). In 2011, the 190 member states of the UN Convention of Biological Diversity (CBD) agreed upon the Aichi targets to halt biodiversity loss by 2020. The 20 targets range from implementing biodiversity policies over sustainable fishing to sustainable agriculture and establishing protected areas. However, none of

the ambitious goals have been fully achieved, only four have been partially reached, and the overall constitution of nature is declining (Sandra Díaz et al., 2020; IPBES, 2019; Kurth, Wübbels, Portafaix, Meyer zum Felde, & Zielcke, 2021).

Human activity has altered 75% of land area (IPBES, 2019). Ecosystems provide us with several invaluable services, such as the provision of food and water, climate regulation, nutrient cycling, recreation, and enhancement of our well-being (TEEB, 2012). But when nature deteriorates, the quality of those services deteriorates as well. Moreover, interference with nature and the destruction of habitats also increases the likelihood for pandemics (Dasgupta, 2021a).

Five factors drive biodiversity loss the most (IPBES, 2019; Kurth et al., 2021). The first is land and sea use change through deforestation. Second, animals or plants are overexploited for example through poaching or overfishing. The third factor is climate change, the fourth is pollution through harmful substances, light or noise, and the fifth is the introduction of invasive species. Most of these factors stem from human activities.

2.1.1.3.3 Pollution

Although plastic was first produced at the beginning of the 20th century, plastic pollution truly accelerated only after the 1950s. Since then, plastic production has increased 200-fold, with no end to this growth in sight (Ritchie & Roser, 2018). Plastic pollution is expected to grow from 260 million tons per year in 2016 to 460 million tons per year in 2030, with over half of it originating from packaging waste (UN, 2019a). Plastic pollution is, however, not the only problem. Air pollution, although decreasing worldwide, is still a major health threat and is estimated to account for 9% of deaths globally (Ritchie & Roser, 2017). Nitrogen is one of the planetary boundaries that is also surpassed (Steffen et al., 2015). Nitrogen pollution can lead to algae blooms in rivers and dead zones in waterbodies, biodiversity loss or acid rain (Leach et al., 2012). Of all the chemical elements on earth, nitrogen has increased the most due to human

activity (Erisman, Sutton, Galloway, Klimont, & Winiwarter, 2008). Nitrogen stems from sources such as livestock feces or fossil fuel burning, but artificial fertilizer accounts for most of it; half of the world's crops rely on fertilizer for growth (Pearce, 2018).

2.1.1.3.4 Inequality

Even though we have made some progress in reducing poverty, global inequality prevails. The chance for managing to live a healthy life, getting an education and not living in poverty, very much still depends on where you were born (Roser, 2013). While almost half of the world's population lives off less than USD 5.50 per day, the richest 1% account for over twice as much wealth as 6.9 billion people (Oxfam, 2021). Regional differences are also prominent. Although the differences between countries are getting smaller, primarily due to the development in China and other regions of Asia, the average income in North America is still 16 times higher than in sub-Saharan Africa (UN, 2020b).

2.1.1.4 ***Pandemic as an Aggravator of the Situation***

The global Covid-19 pandemic has further aggravated the situation by magnifying existing problems. Researchers predict that two-thirds of the development goals will not be met, also due to the effects of the pandemic (Naidoo & Fisher, 2020). In general, the most vulnerable members of societies and the world's poorest are being affected the most, increasing the risk of rising long-term inequalities (Hill & Narayan, 2021; RKI, 2021; WBCSD, 2021). This is also true for other problems such as climate change or environmental degradation (Mendelsohn, Dinar, & Williams, 2006; UN, 2020b).

While the wealth of the nine tech billionaires in the US, such as Elon Musk or Jeff Bezos, increased by USD 360 billion during the pandemic, an additional 119 to 124 million people were forced into extreme poverty in 2020 and lived off less than USD 1.90 per day (Lakner, Yonzan, Gerszon Mahler, Castaneda Aguilar, & Wu, 2021; Tiku & Greene, 2021). And whereas the world's billionaires increased

their wealth by USD 3.9 trillion, the combined earnings of global workers fell almost by the same amount during the pandemic due to lost jobs and loss in incomes (Berkhout et al., 2021; ILO, 2021).

With over 270 million people facing severe hunger, the World Food Programme launched the most extensive humanitarian aid campaign in its history (Nature Editorial, 2020). But hunger is not only a problem in developing countries. Estimates show that 1 in 8 US citizens, or 42 million people, could face hunger in 2021, and the number of people served by foodbanks grew by 55% compared to before the pandemic (Morello, 2021). At the peak of the lockdown, an estimated 1.5 billion students could not attend school (Blake & Wadhwa, 2020). The World Bank estimates that 0.6 years of schooling will be lost due to closed schools, affecting pupils from vulnerable families the most (Hill & Narayan, 2021). Attending school is often also connected to hunger due to missing out on school meals.

A recent study by the World Economic Forum found that the pandemic has delayed projected worldwide equality between men and women by 36 years, from 100 years in 2020 to 136 years in 2021 (WEF, 2021a). Moreover, women have generally been more affected by the pandemic—they tend to work in more critical jobs with direct human contact, such as supermarkets, or health care, without the opportunity of a home office (WEF, 2021a).

Inaction in addressing these economic inequalities also threatens action on other sustainability challenges such as climate change (WEF, 2021b). However, focused investments in the SDGs could help counter those developments and bring about positive change (Pardee Center for International Futures & UNDP, 2020).

2.1.1.5 *Adjustment and Criticism of SDGs*

In light of the recent developments due to the pandemic, and the time to act growing ever shorter, calls for an adjustment of the SDGs as well as a different approach to sustainable development have become louder. But what needs to

change and what can such approaches look like? How can we use this global event as a "positive watershed, after which we built back better" (Naidoo & Fisher, 2020, p. 201).

Regarding setting new goals for biodiversity and climate change, scientists call for a more ambitious and integrated approach (Díaz et al., 2020). This approach needs to recognize the interconnectedness of sustainability challenges, rather than regarding the challenges in isolation and setting isolated goals and targets. This holistic approach has the potential to advance several goals at once, and minimizes trade-offs between them (Díaz et al., 2020; Norström et al., 2014). The systemic interactions that produce trade-offs need to be better understood and these competing "vicious systemic circles" (Messerli et al., 2019, p. 892) need to be broken. This development also leads to the necessity of rethinking old systems and establishing new business and finance models (UN, 2021a).

The SDGs have been criticized in the past for explicitly mentioning economic growth as one dedicated goal (Naidoo & Fisher, 2020; Nature Editorial, 2020). SDG 8 states to "promote sustained, inclusive and sustainable economic growth […] for all" (UN, 2021e). Target 8.1 further specifies to "Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7% gross domestic product growth per annum in the least developed countries" (UN, 2021e). Although another target specifies that economic growth should be decoupled from environmental degradation, such a perspective on growth-based sustainable development can be problematic. For example, the measure of gross domestic product (GDP), used by most economies worldwide, values undesirable outcomes, such as treatment costs for an illness, rather than focusing on health, or pollution, dangerous jobs, and traffic jams (Naidoo & Fisher, 2020).

Although economic growth has led to an increase in wealth and economic development in the past, evidence points toward an unequal distribution of those benefits (Nature Editorial, 2020). Consequently, sustainable development and human well-being need to be decoupled from the pure measure of

economic growth. Put differently, "If the world's economic pie cannot increase, it must be sliced in different ways" (Naidoo & Fisher, 2020, p. 200). One way to do this is to stop harmful subsidies that undermine sustainable development (Nature Editorial, 2020). For example, subsidies for fossil fuels are estimated to account for 6.5% of global GDP, or USD 5.2 trillion in 2017 (Coady, Parry, Le, & Shang, 2019). The same study found that efficient pricing of those fossil fuels can lower global CO_2 emissions by 28%, while raising global government revenue by 3.8% of GDP.

2.1.1.6 *Context Specific Solutions*

Another required change in perspective is to understand the challenges and the necessary transformations within their context (Messerli et al., 2019). Sustainability challenges are different for each country, region or context, and therefore tailored solutions are necessary because only a few solutions are generally applicable (Messerli et al., 2019). Such contexts or "systemic entry points for global transformations" (Messerli et al., 2019, p. 893) were identified to be especially important to forward the international agenda on sustainable development. They not only encompass topics such as health and human well-being, education and equality, but also issues closer to businesses, such as a shift toward sustainable and just economies, sustainable energy systems, and sustainable and healthy food systems (Messerli et al., 2019; Sachs et al., 2019; UN, 2019a; WBA, 2019).

2.1.1.7 *Role of Businesses*

A recent survey found that the pandemic made people more conscious about the effects humans have on the degradation of nature and climate change (Kachaner, Nielsen, Portafaix, & Rodzko, 2020). The study further finds that younger people, in particular, believe that environmental issues should have at least the same priority as economic issues post-pandemic. The responsibility for this commitment was seen to lie with companies and the respondents themselves—87% state that companies should increase the integration of

environmental considerations into their business, and 40% intend to increase their effort to be more sustainable by buying local products or reducing energy consumption. The role of businesses in sustainable development will be analyzed in the upcoming section.

2.1.2 Businesses as Both Cause and Solution

The explicit inclusion of the private sector, i.e., businesses, in sustainable development is considered one of the milestones of the SDGs (Index Initiative, 2015). Business activities are a root cause of many sustainability challenges, such as climate change, biodiversity loss, pollution, and inequality, but also have the highest potential to bring about change (Valuer, 2020). For example, the private sector was estimated to play a crucial role in achieving more than 50% of the 169 SDG targets (AlphaBeta, 2017). Businesses can co-finance the transformation as well as drive technological, organizational, and societal change (Sachs et al., 2019).

2.1.2.1 *Business Effect on Climate Change*

We are already experiencing the consequences of climate change, like more extreme weather events, melting glaciers, or floods. CO_2 emissions increased 150 times from 1850 to 2011, and CO_2 concentration in the atmosphere has reached unprecedented levels in human history (Friedrich & Damassa, 2014). In fact, only 100 companies from the fossil fuel sector are responsible for over 70% of worldwide greenhouse gas (GHG) emissions since 1988, and only 25 of those companies were responsible for 51% of GHG emissions (Griffin, 2017).

The energy sector is also responsible for the largest share of overall emissions (including the transportation sector and energy used in buildings; see figure 4). Agriculture, forestry, and land use is responsible for the second largest share, followed by direct industrial processes such as chemicals, cement, and waste (Ritchie & Roser, 2020). The food system, including processing and distribution, accounts for over a quarter of global GHG emissions (Poore & Nemecek, 2018).

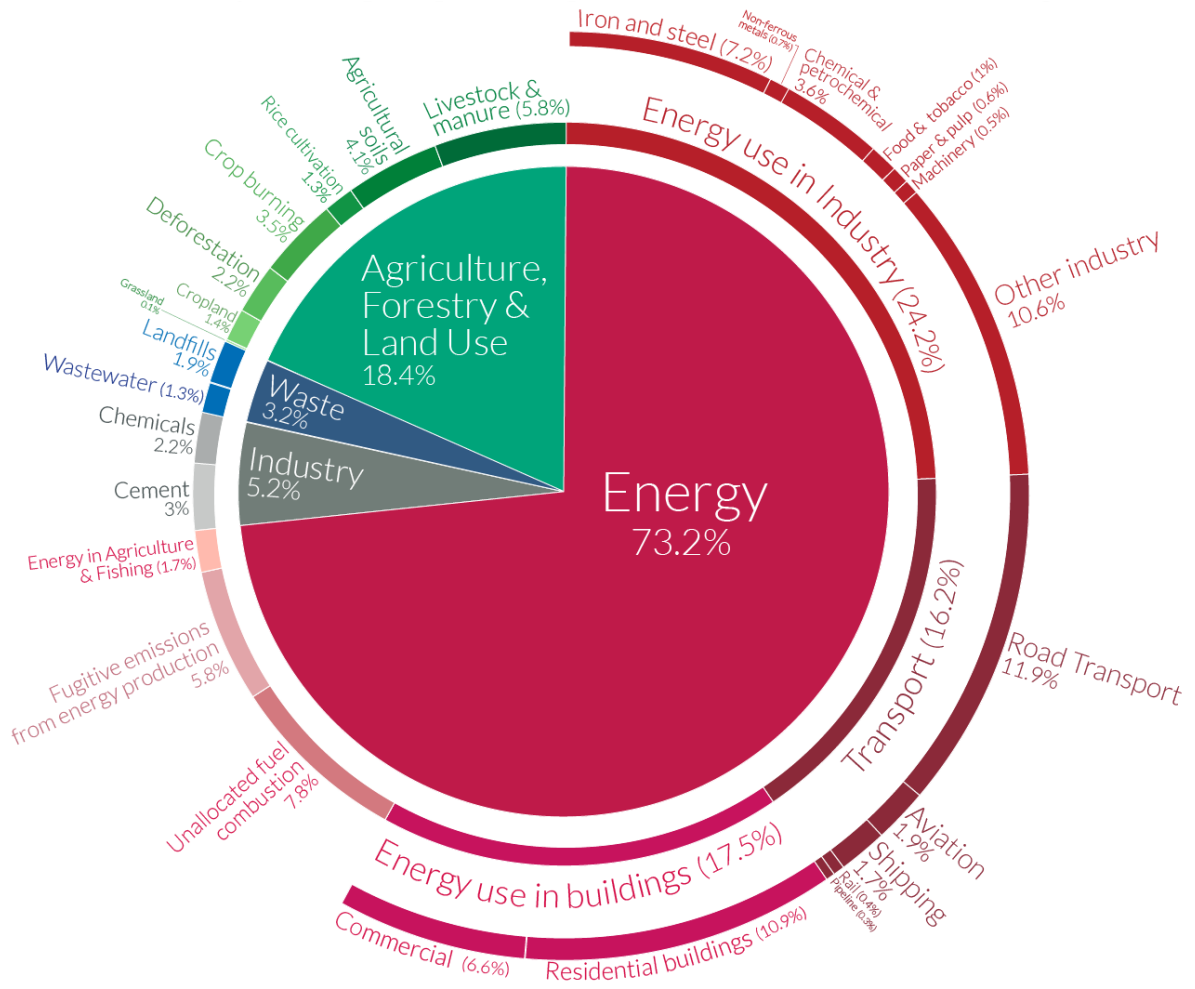


Figure 4: Global GHG emissions by sector in 2016, source: Ritchie and Roser (2020, fig. 1)

2.1.2.2 *Business Effect on Biodiversity Loss*

Although often overshadowed by climate change, biodiversity is a highly relevant topic for businesses as well. Not only are climate change and biodiversity highly interdependent and reinforcing, but ecosystem services provide economic benefits of twice the global GDP each year, and half of this GDP depends on the functioning of our ecosystems (Kurth et al., 2021).

Only four major value chains are responsible for over 90% of the pressures posed on biodiversity caused for example by change in land use or pollution: food, energy, infrastructure, and fashion (AlphaBeta, 2017; IPBES, 2019c; Kurth et al., 2021, see figure 5). Loss of biodiversity poses business risks for companies in those sectors, such as greater risks associated with uncertain resource supply

connected to degraded soils or loss of pollinators (AlphaBeta, 2017; IPBES, 2019c; Kurth et al., 2021).

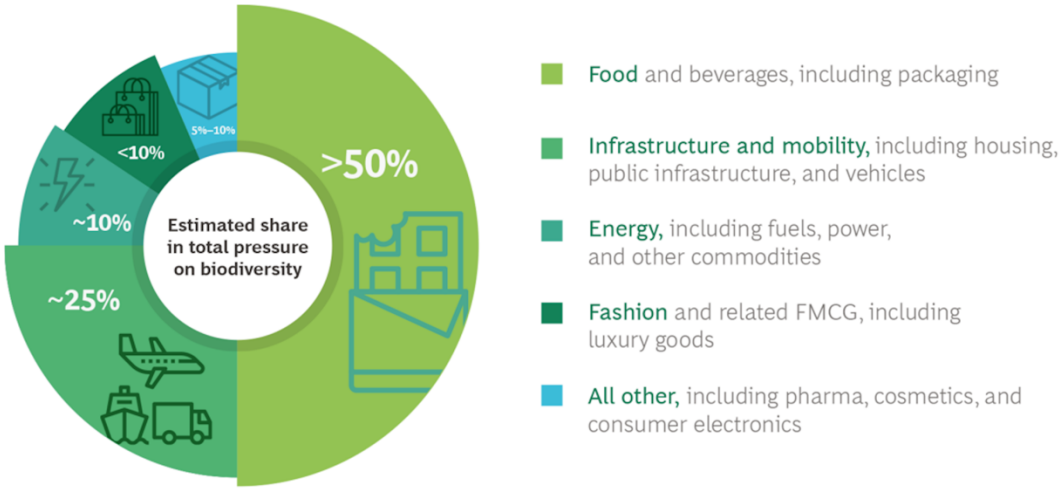


Figure 5: Estimated pressure on biodiversity by four major value chains, source: Kurth et al. (2021, p. 18)

Most of the pressure on biodiversity, 63%, comes from the extraction and cultivation of resources, such as farming and fishing, as well as forestry and mining. Resource conversion and manufacturing, for example, through production or infrastructure, accounts for another 20% (see figure 6).

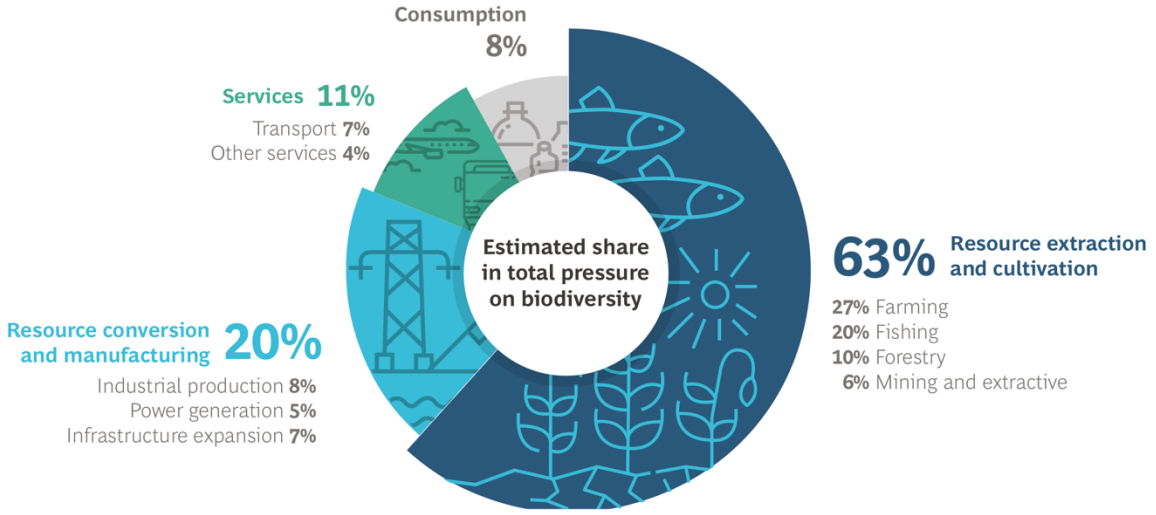


Figure 6: Estimated pressure on biodiversity within the supply chain, source: Kurth et al. (2021, p. 16)

One reason why biodiversity is less popular with businesses than climate change, is because of the complexity of the issue (Kurth et al., 2021). The dynamics of the subject and interactions with other factors such as climate

change are difficult to understand and are even more challenging to measure. Biodiversity loss, in contrast to carbon offsets, is difficult to substitute. Lastly, sharing best practice examples or generalized strategies is difficult because locally adapted actions are necessary for each specific ecosystem. Nevertheless, business executives are more aware of the topic and stated that it is the second most urgent sustainability issue after climate change (GlobeScan & SustainAbility, 2020).

2.1.2.3 *Business Effect on Pollution*

Plastic is non-degradable and derived from fossil hydrocarbons, accounting for 6% of global oil consumption (Ellen MacArthur Foundation, 2016; Geyer, Jambeck, & Law, 2017). This figure will change to 20% of oil production in the next 35 years (Ellen MacArthur Foundation, 2016). As plastics decompose very slowly, they accumulate in the natural environment in the absence of a proper waste management system (Geyer et al., 2017). For example, 32% of plastic ends up in the environment where it decomposes, and microplastics even end up in our food chain (Ellen MacArthur Foundation, 2016). The large share of disposable plastics used for packaging is one of the major problems (Geyer et al., 2017; UN, 2019a).

Consumers often discard material, such as plastic bags, bottles, or packaging after only one use, partly because most of this material is complicated to recycle by design (Hahladakis & Iacovidou, 2018; Lovatt, Gallagher, & Prepscius, 2018). Incentives for companies to design their products for recycling are low as long as virgin plastic is less expensive than recycled compounds (Ellen MacArthur Foundation, 2016). The world's largest polluters are unsurprisingly companies in the fast moving consumer good (FMCG) sector, with Coca-Cola leading the list before Pepsi and Nestlé (Break Free From Plastic, 2020). In a sample of six developing countries—China, India, the Philippines, Brazil, Mexico, and Nigeria—Coca-Cola, Pepsi, Nestlé, and Unilever were responsible for half a million tons of plastic pollution (Laville, 2020; Williams, Gower, & Green, 2019). The Ellen MacArthur Foundation and the UN Environment Programme

(UNEP) launched the *Global Commitment*, an initiative aimed at increasing the circularity of plastics. Companies such as Coca-Cola, L'Oréal, MARS, Nestlé, Pepsi, and Unilever signed the pledge, but progress is slow. In 2020, only 1.9% of packaging consisted of reusable plastic (Ellen MacArthur Foundation, 2020).

2.1.2.4 *Business Effect on Human Well-Being and Inequality*

Transnational corporations are incredibly powerful. They operate across continents and borders driven by expectations of profit in the global financial markets (Schneider et al., 2020). Research suggests that the market capitalization of the world's ten most valuable companies is equal to almost 12% of global GDP, with Apple Inc. leading the list (Baltrusaitis, 2020). A comparison of revenues of the largest companies and countries, using state revenue such as taxes, revealed that 71 entities out of 100 in the list were businesses (Babic et al., 2018), which means those corporations have immense power, both socially and politically (Schneider et al., 2020).

Furthermore, those transnational corporations are disconnected from their environmental and social context, as production and consumption often take place thousands of kilometers apart (O'Higgins & Zsolnai, 2018b). Such a functionally and geographically fragmented value chain builds on the trade of intermediate goods and services rather than final products and outsourcing of whole parts of the supply chain (Phillips, 2017). Global value chains (GVCs) are responsible for 80% of global trade and for one out of five jobs worldwide (Phillips, 2017; UNCTAD, 2013). GVCs are complex and companies often find it difficult to track the origins of every part of their products. Furthermore, the entire system of GVCs is based on global inequalities in wages, working regulations, and environmental standards (Phillips, 2017; Schneider et al., 2020). Events like the collapse of the Rana Plaza factory in Bangladesh shone light on precarious working conditions in such opaque supply chains. The corporate risks of such supply chains were demonstrated when the pandemic disrupted them and led to supply shortages.

2.1.2.5 *How Businesses Are Part of the Solution*

Businesses are among the many players that influence sustainable development and are not exclusively responsible for the degradation of our planet and social injustice (Dyllick & Muff, 2017). But they play an essential role to both the cause and the solution of sustainability challenges. Or, as the World Business Council for Sustainable Development phrased it in their Vision 2050 report: "Business can lead. Business can forge the collaborations required to drive change. It can… but more than that, it must" (WBCSD, 2021, p. 2). Businesses are also starting to realize the potential for long-term value creation that comes with a contribution to sustainable development (WBCSD, 2021). In turn, sustainability will also highly influence business strategies, business models, and operations (Dyllick & Muff, 2016). Moreover, the private sector has the potential capital, technology, and knowledge to solve sustainability challenges, especially related to production and consumption (UN, 2018).

The general public also sees businesses as having the responsibility to speak up and lead change. In a global survey conducted by Edelman, 66% of respondents agreed that CEOs should take the lead to tackle societal problems, and 86% expected CEOs to address societal issues publicly (Edelman, 2021).

2.1.2.6 *How Businesses Can Contribute to Sustainable Development*

Some companies have already picked up on how they can contribute to sustainable development and have implemented measures to reduce their carbon footprint, manage their impact on biodiversity, reduce plastic waste, or make their supply chain transparent and just. A study suggests three ways that businesses will contribute to sustainable development and the achievement of the Agenda 2030 (AlphaBeta, 2017). First, firms can create new markets by including previously excluded consumers and raising their income or by expanding their offering, for example., sustainable and affordable housing. Second, companies can transform their production and supply chains to be sustainable through efficiency measures and reduce waste or improve labor

productivity through education. Third, firms can initiate changes in regulations, for example, with regards to GHG emissions. Lastly, corporations also significantly impact how consumer preferences and markets are shaped and how resources are consumed (UN, 2018). Therefore, the UN calls for a reimagination of business and finance models to drive sustainable development (UN, 2021a). This thesis follows this call and proposes new, innovative, and *truly sustainable* business models as an instrument for companies to make effective contributions to sustainable development.

2.1.2.7 *Priorities for Business in Sustainable Development*

When it comes to the topics companies address regarding sustainable development, a few stand out. Climate change and climate action (SDG 13) are usually mentioned as the top priority for businesses in sustainable development (BSR & Globescan, 2019; Constantine, 2016). Companies in the apparel industry, FMCG, and manufacturing stated that SPC were a top priority (BSR & Globescan, 2019; Constantine, 2016). These two goals are highly interconnected and necessary to achieve the Paris Agreement (Alfredsson et al., 2018). SPC also fall under a single, dedicated SDG, SDG 12, a goal directly connected to businesses.

SPC support the achievement of almost all other goals and can be seen as an enabler for sustainable development (IRP, 2017; One Planet Network, 2018). Yet, "perpetuating current modes of production and consumption, and current levels of inequality threaten the achievement of the entire 2030 Agenda" (UN, 2019a, p. xxiv). This situation makes switching from our current, unsustainable economy to sustainable production and consumption patterns among the leading global challenges for businesses. To address this challenge, we need to better understand the role and procedures that companies can employ in order to transform toward a sustainable way of production and consumption.

2.1.3 Sustainable Production and Consumption

The following section establishes the particular importance of SPC for sustainable development in the business context.

2.1.3.1 *What Is Sustainable Production and Consumption?*

The concept of SPC[3] first emerged on the international agenda at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. One of the first definitions from the Oslo Symposium in 1994 referred to "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations". Later on, SPC was specified to be "a holistic approach to minimizing the negative environmental impacts from consumption and production systems while promoting quality of life for all" (UNEP, 2011, p. 10). The concept "goes beyond efficiently using natural resources, it is a holistic approach that considers people […], the planet […] and profit, [which] mirrors the complexity of our planet and the global economy" (One Planet Network, 2018, p. 4). While there is no single, uncontested definition, most concepts evolve around common themes.

Common aspects across those definitions are a minimization of ecological impacts and ensuring that minimal social requirements are met. These aspects are also referred to as decoupling resource use from human well-being, or, put differently, environmental degradation from economic growth. Borrowing from the definition of sustainable development, the needs of present generations should not jeopardize the potential of future generations to meet their needs. Another common theme is a systemic understanding of SPC that

[3] Often the concept is also referred to as sustainable consumption and production (SCP), or responsible consumption and production. In this thesis I will use the term sustainable production and consumption, or SPC.

aims for a holistic transformation of the production and consumption system. Finally, lifecycle thinking is another common theme across the definitions.

2.1.3.2 *Frameworks for Sustainable Production and Consumption*

2.1.3.2.1 10YFP

The international community established several goals and frameworks for SPC. The first one—the 10-Year Framework of Programmes (10YFP)—was established in 2012. This commitment aimed to bring together multiple stakeholders to transform our current production and consumption patterns, focusing on collaboration and capacity building to make the system more sustainable (One Planet Network, 2021a; Rouhban, 2017; UNEP, 2021d). It consists of six programs: Sustainable Public Procurement, Consumer Information for SCP, Sustainable Tourism, Sustainable Lifestyles and Education, Sustainable Buildings and Construction, and Sustainable Food Systems (UNEP, 2021a). The program was later renamed One Planet Network, further stressing the stakeholder approach it pursues (One Planet Network, 2018).

2.1.3.2.2 SDGs and SDG 12

With the introduction of SDGs in 2015, SPC was given a dedicated goal of its own: SDG 12. SPC is one of the most effective and cost-efficient ways for sustainable economic development and is linked to almost all other goals in some way (UN, 2018). It is directly linked to SDG 4 and 8 through economic growth and education (IRP, 2019; One Planet Network, 2018), and directly referred to in goal 8.4. Hence, achieving SDG12 means that the achievement of other goals too is positively influenced (UN, 2019a).

Business topics for SDG 12 include efficiency of resources like energy or water, sustainable sourcing, pollution and GHG, waste management, food waste, producer responsibility, or product labeling (GRI et al., 2021). The topic of SPC

is also closely linked with other sustainability topics, such as the fight against plastic pollution, sustainable transport, environmental resource conservation both on land and in the water, and climate change in particular (UN, 2018). The importance of SPC for fighting climate change was also explicitly stated in the Paris Agreement: "[…] sustainable lifestyles and sustainable patterns[4] of consumption and production, with developed country Parties taking the lead, play an important role in addressing climate change […]" (United Nations, 2015, p. 2). Thus, a shift to SPC is at the core of both Agenda 2030 and the Paris Agreement (UN, 2018). To achieve the goals in the Paris Agreement, production and consumption need to be reduced as they are a significant driver of GHG (Alfredsson et al., 2018). Such a link to SPC also needs to be established for other agendas such as biodiversity (Rouhban, 2017).

2.1.3.3 ***Efficiency vs. Systemic Approaches***

2.1.3.3.1 Efficiency and Weak Sustainable Production and Consumption

Existing approaches toward SPC can be divided into two categories: an *efficiency approach* and a *systemic approach* (Bengtsson et al., 2018). The efficiency approach focuses mainly on better products or methods of production, for example, innovative technologies or different consumer choices like eco-labels. These approaches have also been called *weak sustainable consumption* (Hobson, 2013; Lorek & Fuchs, 2013), which refers to incremental changes and improvements in consumption efficiency, for example, through technological innovation. This approach focuses on creating a better quality of life while *minimizing negative* impacts, or improving the quality of life without *increasing* environmental *degradation* (Akenji et al., 2015). The approach has been criticized for being inadequate in helping achieve the needed changes and is similar to the arguments of efficiency-focused corporate responsibility (Sandberg, 2021). The

[4] Those patterns shall not be confused with those for business models. In this context the word pattern is used in the literature to describe current characteristics and model of production and consumption.

understanding of SPC as expressed in the SDGs is mostly efficiency-focused and not enough to bring about the change that is needed to make the necessary, *systemic* transformations (Bengtsson et al., 2018).

2.1.3.3.2 Systemic and Strong Sustainable Production and Consumption

To effectively address sustainability challenges through SPC, a *systemic* perspective is needed. This perspective focuses on the overall level of production and consumption and addresses the need for overall, systemic, and institutional change through rethinking whole systems and business models (Bengtsson et al., 2018). In the context of consumption, such a systemic approach has also been called *strong sustainable consumption*, which aims for radical systemic change and new solutions rather than improving existing ones. Hence, a systemic approach seems promising for a deeper dive into the connection between SPC and sustainable development (Lorek & Fuchs, 2013). To solve the environmental crisis, we need a new trajectory with a new economic system, consumer culture, infrastructure, and production methods (Bengtsson et al., 2018).

2.1.3.4 ***Summary of Chapter 2.1***

"What society and the planet need in the next two decades is nothing short of an economic miracle whereby business with its capacity for innovation is uniquely well placed to generate such a miracle" (Dyllick & Muff, 2017, p. 7). This quote by Dyllick and Muff perfectly summarizes chapter 2.1. The first part of this chapter described some of the most pressing challenges of our time—climate change, loss of biodiversity, pollution, and global inequality. The SDGs and the planetary and societal boundaries are approaches that show the way forward for humans to live well within the limits of our planet and society.

Businesses play a huge role in addressing those challenges. However, the SDGs were also criticized for a lack of guidance in implementing and pursuing them, especially at the business level (Randers et al., 2018; PwC, 2015). A study

conducted by PWC found that of the 72% of companies that mention the SDGs in their reporting, only 27% of them state the goals as an explicit part of their strategy (Scott & McGill, 2018). Even fewer companies published meaningful key performance indicators (KPIs) to measure their progress. This study hypothesizes that this discrepancy is due to the lack of tools and strategies to convert SDGs into concrete business actions. Therefore, we need tools that integrate value creation for business and for society (Whiteman et al. 2013; Dyllick & Muff 2016). According to the UN Environment Programme, we need to "bridg[e] the gap between the science on natural resources and the socio-economic features of production and consumption" (UNEP, 2021b, p. 11).

SPC is a major lever for businesses to contribute to sustainable development. This is why it was chosen as an illustrating context for the thesis to make business approaches to sustainable development more tangible.

2.2 True Business Sustainability: A New Perspective

This section establishes the meaning of business sustainability in the context of this thesis. This section starts by briefly discussing the concept of sustainability in general and providing reasons for why a new view on sustainability is needed to address the sustainability challenges of our time. I discuss the necessary changes along three dimensions: the perspective on sustainability, the company's purpose and an understanding of value creation, and how company success is currently measured in relation to sustainability. Current approaches and their shortcomings are analyzed for each of the three points, establishing the space on which this research is built.

This thesis proposes the perspective of TBST as a radically new view on sustainability to address the previously identified shortcomings of current approaches for business sustainability (Dyllick & Muff, 2016). Changes from the traditional to the new view on sustainability are illustrated along the three dimensions in each section: perspective, company purpose and value creation, and company success (see figure 8).

2.2.1 The Need for a New View on Sustainability

Following the arguments of Dyllick and Muff (2016), businesses need to adopt a new view on sustainability to address sustainability challenges effectively and to rethink their role in society. One reason why businesses are ineffective in tackling sustainability challenges is the reduction of sustainability topics to the business case as the motivation and measure of sustainability (Dyllick & Muff, 2016; Ehrenfeld, 2012; Landrum, 2017). A consequence of reducing large societal issues to individual business cases is that businesses are not able to address most of our social and environmental challenges. Such a narrow micro-level view on business sustainability leads to a disconnect of those approaches from the systemic, macro-level planetary and societal challenges. Current research on sustainability often lacks the perspective on nature and society and fails to integrate broader environmental and social concerns. Systemic solutions require an interdisciplinary approach currently missing from the conversation (Bansal, 2019; Dyllick & Muff, 2017; Sharma, 2019). Phenomenon- and action-driven research need to introduce bold steps to address those challenges.

Research in business sustainability has primarily focused on building the business case for sustainability (Hahn, Pinkse, Preuss, & Figge, 2015; Henderson & Steen, 2015; Salzmann, Ionescu-somers, & Steger, 2005). Such a focus on the business case, reflecting an understanding of weak sustainability, is still the dominant worldview of businesses (Landrum & Ohsowski, 2018). The business case for sustainability implies that well-being is equal to material wealth (Painter-Morland, Demuijnck, & Ornati, 2017; Whyte & Lamberton, 2020). Sustainability has to *pay off*, and the prevailing focus on such win-win situations reflects a business perspective rather than a focus on societal needs (Dyllick & Muff, 2017). But to successfully face the sustainability challenges in the future, a different approach to business sustainability is needed, moving away from financial prioritization and trade-off scenarios (see figure 7).

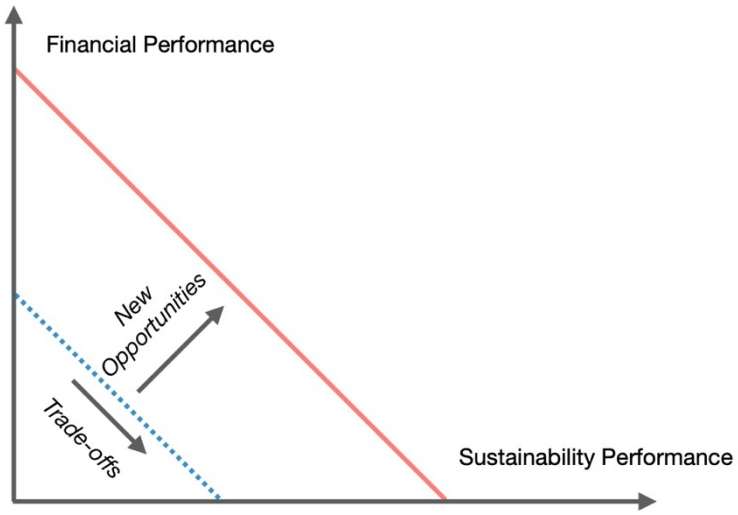


Figure 7: From trade-offs to new opportunities, source, own depiction, based on Lüdeke-Freund et al. (2016)

In a classic trade-off scenario, social or environmental value creation is weighted against profitability. The company moves along the lower initial curve in the case of "weakly sustainable corporate development" (Lüdeke-Freund, Massa, Bocken, Brent, & Musango, 2016, p. 21). However, the creation of social or environmental value should not be considered a trade-off at the cost of financial viability but should instead be seen as an "expansion of the pie," i.e., business opportunities that both have a greater impact on society and the environment and bring higher business profitability (Jay & Gerard, 2015; Lüdeke-Freund et al., 2016). In this case, the curve moves outward. This understanding is referred to as the integrative view on corporate sustainability. Further along, this thesis proposes sustainable business as a vehicle to pursue opportunities for higher value creation across all domains.

This transformation demands a change in many aspects of the firm, primarily a move away from the overemphasis of the business case (Painter-Morland et al., 2017). Scholars propose several dimensions for analyzing these changes. Lankoski (2016) suggests analyzing the scope, substitutability, and goal orientation of sustainability used by a company. Dyllick & Muff's (2016) analysis of change focuses on the issues and topics businesses address, the organizational perspectives adopted by the firm, and the values created in their analysis of different approaches to business sustainability. Similarly, I focus on

the perspective or concerns of sustainability, the understanding of company purpose and value creation, and how company success is measured (see figure 8). I will identify the shortcomings of current approaches along these three points and introduce the perspective of TBST for each of those points as a novel way of addressing previous shortcomings.

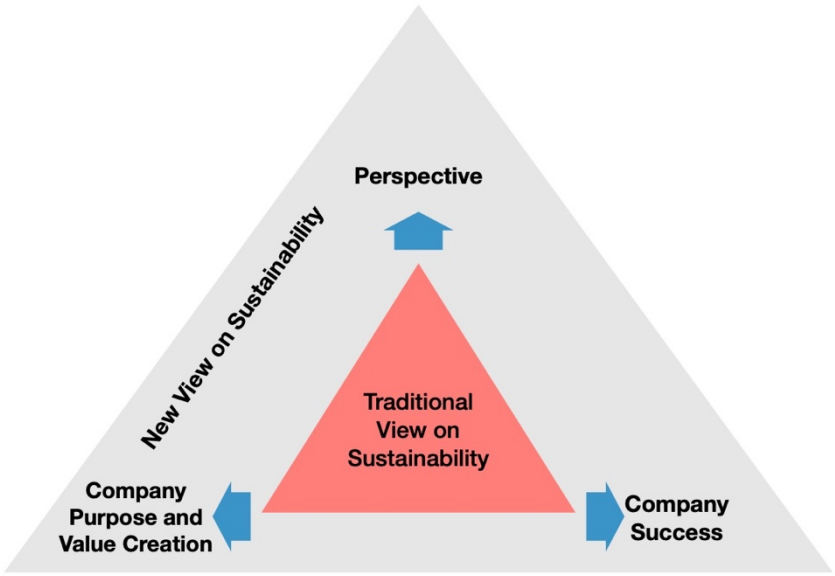


Figure 8: Elements of a new view on sustainability, source: own depiction

2.2.2 Perspective

An increasing number of firms integrate aspects of sustainability into their business. However, the extent of their actions and the effective outcome is heavily dependent on their underlying understanding of and perspective on sustainability (Landrum, 2017). Different understandings and perspectives can potentially cause tensions between opposing interpretations (Whyte & Lamberton, 2020). Differences concern the relationship of humans to nature, or in this context, of businesses to their environment. In general, this understanding ranges from humans existing independent of the natural environment to a view of the world as completely interconnected. These views can be differentiated into weak and strong sustainability, also classified as the technocentric, ecocentric, and sustaincentric worldview.

2.2.2.1 *The technocentric, ecocentric and sustaincentric worldviews*

Gladwin, Kennelly, and Krause (1995) analyze the diametric views of technocentrism versus ecocentrism and propose sustaincentrism as a middle ground between the two. Technocentrism takes a utilitarian approach and sees humans as separate from and superior to nature. Nature only serves the purpose of providing resources to humans, measured in monetarily quantifiable value. The aim is to develop through economic growth and technological innovations. Those innovations will always provide a solution to resource shortages; and therefore, the earth's resources are seen as being infinite. Also, it is assumed that all damage to nature is reversible.

Contrarily, ecocentrism takes a systemic standpoint and views the earth as the "nurturing mother of life" (Gladwin et al., 1995, p. 886), which humans are part of and dependent on (Whyte & Lamberton, 2020). Nature has value outside of human use and perception, and is a fragile system that can be easily disrupted, sometimes irreversibly. Therefore, humans should limit the exploitation of natural resources only to satisfy basic needs. This worldview calls for a steady-state economic system over growth. In ecocentrism, human well-being takes second place over the well-being of natural systems.

As a synthesis of both points, sustaincentrism proposes stewardship of the earth and the natural environment because human survival depends on nature's preservation. This view sees humans as part of nature, but not as being fully integrated with it; humans are seen as intellectually superior and standing above other species. The stewardship of the earth also extends to social systems and future generations. Furthermore, sustaincentrism recognizes the absolute limits of our planet, and believes that economic development within those boundaries will be achieved by eliminating global inequality.

2.2.2.2 *Weak and Strong Sustainability Worldview*

Traditionally, the concept of *weak sustainability* has been used to describe the substitutability of human and natural capital (Lankoski, 2016). In the business

context, it means that value in the social, economic, and environmental domains is substitutable between themselves. Weak sustainability is regarded as an addition or extension of the neoclassical view of economics (Upward & Jones, 2016). In this worldview, unlimited growth is the objective, and sustainability means that investment in human or man-made capital is large enough to counteract environmental depreciation.

In the *strong sustainability* worldview, value cannot be created in one domain on account of another (Lankoski, 2016). Proponents of this worldview see the macroeconomy as a sub-system of a finite natural ecosystem (Upward & Jones, 2016), which stands in sharp contrast to neoclassical economics and its understanding of weak sustainability. A strongly sustainable company is defined as "one that creates positive environmental, social, and economic value throughout its value network, thereby sustaining the possibility that human and other life can flourish on this planet forever" (Upward & Jones, 2016, p. 103). The company pursues changing societal habits and transforming the current regime (Oliveira Neto, Pinto, Amorim, Giannetti, & Almeida, 2018).

2.2.2.3 *Consequence of These Worldviews for Businesses*

Those worldviews influence business actions on sustainable development. Recognizing that business is "constrained by and dependent upon ecosystems (nature)" (Hart, 1995, p. 991), implies that business strategies have to comply with those principles. For example, a sustainable business strategy "does not merely seek to do less environmental damage but, rather, to actually produce in a way that can be maintained indefinitely into the future" (Hart & Dowell, 2011, p. 1466). The following paragraphs will describe some approaches to conceptualizing an integrative understanding of sustainability at the company level.

The concept of *net positive* is based on the premise that "the natural world and society should be better off with companies than without them" (Balch, 2013). The positive impact of companies should reach beyond the boundaries of the

firm as it considers the natural world and society (Forum for the Future, WWF, & The Climate Change Group, 2014b). Although the net positive approach sounds promising, it is criticized for employing weak sustainability, as implicated by the word 'net,' and thus a de facto acceptance of trade-offs. Furthermore, it concentrates predominantly on the key business areas a company pursues, disregarding an overall, systemic understanding of its activities.

Schaefer et al. (2015) identify several prerequisites of businesses to qualify as *flourishing*, i.e., long-term sustainable (Ehrenfeld, 2008). A central theme of this approach is to change the importance of profit to be a means to the cause of sustainable development. This point will be further elaborated in Section 2.2.3. A company promoting its business as flourishing needs to promote social equity and justice across its activities. This change can only happen if systems thinking is applied, regarding businesses as part of a complex system consisting of different societal and environmental dimensions. When taking a more resource-oriented perspective, such a business needs to stay within the planetary boundaries with its operations. At the same time, systems thinking and the adoption of a more holistic perspective also lead to a more long-term focused time horizon.

Both the above approaches pursue an *inside-out* perspective on business sustainability. This means that sustainability considerations start with the business and evaluate how it can increase its impact. The adoption of an *outside-in* perspective, on the other hand, is one of the cornerstones of TBST. It means to analyze the impact organizations and their strategies have on the natural environment instead of analyzing the strategy itself (Sharma, 2019). Such a change entails that the business looks at problems within its external environment as a starting point for its business decisions. It "translates sustainability challenges into business opportunities making 'business sense' of societal and environmental issues" (Dyllick & Muff, 2016, p. 166). In adopting this perspective, a company addresses root causes rather than symptoms (Laszlo et al., 2012; Schaefer et al., 2015). Businesses need to see themselves as

an integral part of the natural environment and society, or as "responsive citizens" (Dyllick & Muff, 2016, p. 160). By acknowledging their embeddedness, firms also recognize their impact on the planet and people and their role in influencing both. This reflects an integrated understanding of sustainability, where the economy is embedded in the social and environmental spheres (Cato, 2009).

The perspective that businesses apply to view sustainability also influences the understanding of value creation and company purpose, elaborated in the next section.

2.2.3 Adapting Company Purpose and Value Creation

"Are businesses doing good?" When asked this question, only 52% of the global population said they believed that firms do what is right (Edelman, 2018). At the same time, though, the notion of business purpose is undergoing rapid changes. Generally speaking, "an organization's purpose is not a formal announcement, but instead a set of common beliefs that are held by and guide the actions of employees" (Gartenberg, Prat, & Serafeim, 2016, p. 3). A company's business purpose is its reason for being in business, and it specifies how the people involved with an organization make a difference in the world. This, in turn, "gives them a sense of meaning, and draws their support" (Quinn & Thakor, 2018, p. 79). The notion of purpose is closely connected to the understanding of value creation within the firm, as the creation of some form of value is the company's purpose.

2.2.3.1 *Emphasis on Financial Value Creation*

When we talk about value in a business context, it usually insinuates financial value. A company is seen as creating value if it creates a constant and long-term profit stream. Consequently, traditional management theory focuses on the maximization of economic value (Friedman, 1970). Other forms of value creation attracted more attention with the emergence of concepts like the triple

bottom line (Elkington, 1997). But financial or economic value are still prioritized over social or environmental value. Yet, in recent years, an increasing number of scholars and practitioners propose a company purpose that goes beyond maximizing profits (Beal et al., 2017; Henderson & Steen, 2015). For example, Stubbs and Cocklin (2008) regard profit as an outcome and facilitator of sustainability activities and are only one of many to take on this perspective. Such a purpose-driven company contrasts with profit-driven organizations and is becoming more mainstream (Eccles, Strine, & Youmans, 2020).

2.2.3.2 *Social Businesses and Social Entrepreneurship*

One instance is Yunus's (2007) conception of social businesses. He has suggested that this kind of business does not exist to maximize profits but to pursue social goals and to solve social and environmental problems. First of all, a social business needs to be economically sustainable, supporting itself in the long- run. A social business is not a charity or non-governmental organization (NGO), which relies on external sources such as donations or government grants for financing. So, the company is allowed to make a profit, but investors in the company are not. They only recover their initial investment over time, which Yunus refers to as the non-loss, non-dividend principle. Rather than making the investors richer, the profits are reinvested in the company to maximize the sustainability impact. The concept of social business shows a different outlook on financial value creation, where financial value is established next to instead of above societal value creation.

Social and sustainable entrepreneurship are concepts that are closely related to social business. Here again, the company's primary purpose is to solve sustainability challenges rather than to maximize financial value (Schaefer et al., 2015; Schaltegger & Wagner, 2011). Those organizational forms are also referred to as hybrid businesses because they mix features of for-profit and non-profit businesses (Davies & Chambers, 2018; Santos, Pache, & Birkholz, 2015).

2.2.3.3 *Creating Shared Value*

Another understanding of value creation that has received enormous attention is creating shared value (CSV). In their seminal publication about shared value, Porter & Kramer (2011) proposed changing the purpose of a company as maximizing shareholder value to CSV. The term refers to the creation of economic value as well as creating value for the common good by addressing sustainability challenges. They argue that this will contribute to closing the gap between society and business and help reinstate lost trust (Edelman, 2018). However, the authors still take on an inside-out perspective for identifying opportunities for CSV, as they suggest a business-level solution to a systemic problem (Dyllick, 2014). CSV might not turn out to be the best solution for the stakeholders or society as a whole because instead of addressing the inherent tensions and trade-offs among economic, social, and environmental domains, financial value and win-win situations are given priority (Crane, Palazzo, Spence, & Matten, 2014). This selective behavior could lead to "islands of win-win projects in an ocean of unsolved environmental and social conflicts" (Crane et al., 2014, p. 139). Furthermore, guidance for businesses on implementing CSV is missing (Dembek, Singh, & Bhakoo, 2016).

2.2.3.4 *Net Positive*

The net positive approach introduced in the previous section also addresses principles of value creation. A net positive firm must positively impact its key material areas, i.e. the most important areas for its business activities (Forum for the Future, WWF, & The Climate Change Group, 2014a). However, concentrating on their key material areas does not mean they can engage in unacceptable or irreversible environmental or social impacts such as mistreatment of individuals or communities. If ecological materials are applied in key areas, they must operate in an environmentally restorative and socially inclusive way. In general, the company needs to take every opportunity to positively impact the value chain, industry, society, and the planet.

A similar explanation to the concept of net positive is provided by O'Higgins and Zsolnai (2018b, p.12), who state that "a business organization can be considered ecologically sustainable if its aggregate ecological value is positive." Beal et al. (2017) too argue for a company to include its total societal impact in all business decisions, a measure of all accumulated positive and negative effects of a company across social, environmental, and economic dimensions. This concept explicitly includes a macro-level perspective. While those approaches go far beyond the business case philosophy, they still reflect a trade-off approach between the different spheres of economic, social, and environmental value (see figure 7, "expanding the pie").

Another concern with these approaches is that an efficiency-based, weak understanding of sustainability focuses on reducing or compensating negative values, i.e., "reducing unsustainability" (Landrum, 2017, p. 2). Reduction strategies involve reducing waste or emission, mitigating other environmental impacts, or energy and resource efficiency (Bocken et al., 2014). The reduction of negative impact reflects an understanding of what Dyllick and Muff (2016) refer to as Business Sustainability 1.0—refined shareholder value management.

2.2.3.5 *Stakeholder Capitalism*

A "new model of capitalism" has been called for (UN, 2021a, p. 60) to help overcome the prioritization of business value over larger societal values. One idea for such a transformation is stakeholder capitalism, where companies aim for "long term value creation, by taking into account the needs of all their stakeholders, and society at large" (Schwab & Vanham, 2021, para. 2). This new model of capitalism is based on stakeholder theory, which states that a company exists within its relationship to suppliers, employees, investors, and other groups, whose needs must be considered in business decisions (Freeman, 1984; Parmar et al., 2010). Taking a stakeholder perspective is a reaction to increased pressure from the public to change the current economic system. After all, 56% of people in a recent study agreed to the statement that, "Capitalism, as it exists today, does more harm than good in the world" (Edelman, 2020, p. 12). In 2019,

181 CEOs of the biggest US companies united in the influential lobby group *Business Roundtable* and endorsed a new manifesto (Business Roundtable, 2019; Eccles, 2020; Grove, Holcomb, Clouse, & Xu, 2020). They committed to redefining their company's purpose from delivering value to their shareholders to recognizing the needs of all their stakeholders. However, a study found no evidence that any signatories engaged in stakeholder-specific actions and walked the talk, while some even took counter-measures such as fighting climate action (Raghunandan & Rajgopal, 2020; Winston, 2019). After all, such a commitment would mean completely altering the business for a large share of those companies (Winston, 2019). The lack of support from the companies' board of directors hints at the fact that the signatories did not expect much change to come out of the statement themselves (Bebchuk & Tallarita, 2020).

2.2.3.6 *Moving Beyond the Focus on Financial Value Creation*

Yet, some corporations have already engaged in the process of rethinking their approach to value creation and their company's purpose. One example is B Corps,[5] "a new kind of business that balances purpose and profit" (B Lab, 2018b). It is a certification issued by the global non-profit organization B Lab, aimed at for-profit companies. At present,[6] 3,928 companies across 150 industries and 74 countries are certified, including Ben & Jerry's and Patagonia (B Lab, 2021). Unlike other labels, it goes beyond certification of products or services and includes the whole company and the business model (B Lab, 2018a). The purpose of those businesses is to "use profits and growth as a means to a greater end: positive impact for their employees, communities, and the environment." The concept even extends to the so-called B Economy, an economy where "businesses compete to be the best for the world" (B Lab, 2018c).

[5] Not to be confused with benefit corporations, a corporate entity with legal status in parts of the USA
[6] As of April 29th, 2021

Ownership and investment structures have been identified as hinderances, especially for big, transnational companies, to their becoming more sustainable and to adopting environmental stewardship (Schneider et al., 2020). This is where the concept of steward-ownership comes in. This concept proposes that the legal status of the organization is dedicated to serving the common good and follows two principles: *self-governance* and *profits serve purpose* (Purpose Economy, 2021). First, the company's assets are locked in a trust, averting the sale of the firm. The company belongs to itself and the values it serves (Ehrenhauser, 2019). Self-governance means that decisions are made by people directly connected to the company instead of, for example, investors halfway around the world. Second, profits are reinvested in the company, privatization of those profits is not allowed.

Similarly, the Economy for the Common Good has gained a lot of popularity in recent years as well. It "advocates a more ethical economic model, in which the well-being of people and the environment become the ultimate goal of business" (Economy for the Common Good, 2018). It promotes an ethical market economy, aiming for a good life for all instead of economic gains for the few (Economy for the Common Good, 2021; Felber, 2012).

To sum up, when it comes to understanding value, the trend is toward a more holistic view of value, yet the term is still primarily associated with financial benefits. In particular, the term value capture, as later used in the business model context, continues to only be related to the profit mechanism and cost structure of a firm. This lack of a holistic understanding is identified as a gap that calls for a redefinition of value to consider all dimensions equally. This thesis therefore adopts the understanding of value creation and company purpose from TBST. Companies have to aim for value creation for the common good instead of for a small group, such as shareholders. For such a change, the company purpose has to change as well. Instead of shareholder maximization as the sole reason for its existence, a truly sustainable business transforms its purpose into "serving the common good" (Dyllick & Muff, 2016, p. 166). The company also considers ecosystems and non-market stakeholders in its new

configuration (Stål, 2018). Instead of an efficiency-based approach to sustainability, such as minimizing or compensating for negative impacts, a truly sustainable company aims to create positive value. Such a company switches its perspective on value creation from reducing the bad to enhancing the good or from reducing unsustainability to creating sustainability (Dyllick & Muff, 2016; Landrum, 2017).

2.2.4 Redefining Company Success

In addition to redefining company purpose and value created, it is necessary to adopt a new understanding of company success. Instead of being solely rewarded for an increase in market capitalization, a business needs to be "celebrated for its contribution to society" (Dyllick & Muff, 2016, p. 171). Currently, company success is associated with value creation in financial terms. This understanding of monetary profit being the desired business outcome can be called profit-normative (Upward & Jones, 2016). Yet, judging a company's success in purely financial terms hinders the transformation toward TBST. The market should "reward value creation, not value extraction" (WBCSD, 2021, p. 2). Some approaches already aim to redefine company success.

2.2.4.1 *More Than Profit*

A study by PwC of global investors and CEOs found that 63% of participants already defined company success by more than just financial gains (PwC, 2016). In fact, larger companies tend to include non-financial measures in their reporting. A study by KPMG found that 78% of companies in their sample believed sustainability reporting to be relevant for investors (KPMG International, 2017). Further, accounting standards as set by the *Global Reporting Initiative* are becoming the gold standard in sustainability reporting and are increasingly popular among companies. But this measure is merely an addition to traditional accounting measures rather than a fundamental change. Consequently, such actions are just an incremental rather than a radical shift in how business success is defined. And it seems fitting to note that although 67%

of the biggest global companies (G250) include targets for carbon emission reduction in their respective sustainability reports, those targets are rarely connected to international sustainability goals such as those in the Paris Agreement. This mismatch once again demonstrates that the disconnect between business activities and the state of the planet also extends to company success.

2.2.4.2 *Profit as a Means to an End*

Some approaches go one step further and already argue for a rethinking of how business success should be measured. The concept of business-as-flourishing sees "profit as a means to an end, not an end in itself" (Schaefer et al., 2015, p. 399). In a net positive scenario, the success of a business should be judged by its net positive impact rather than profits (Gould, 2015). The Economy for the Common Good approaches this question from a different angle, developing an accounting method that measures the contribution of a company to the creation of societal value (Felber, 2012). The Common Good Matrix considers a company's activities from a 360-degree angle, only measuring what goes beyond the legally required standards. Included are indicators such as impact on the quality of life of current and future generations, social justice, environmental prosperity, and the partnerships for achieving those goals. Social businesses aim to solve a societal problem. Hence Yunus (2007) demands that such organizations are not evaluated in financial terms but instead in line with their objective of creating social benefits.

Similar to Schaefer et al. (2015), this thesis suggests that financial profitability should not be the starting point and the only criterion for business decisions (Moratis & Melissen, 2020). Hence, when choosing between options, a company should pursue the more sustainable option as long as enough value for the shareholders is created as well (Dyllick & Muff, 2016). The goal of a truly sustainable business is to primarily create value for the common good and then for itself, treating profit as a meant to an end rather than an end to itself. Hence,

the success of this company should also be measured in terms of how effectively it contributes to solving sustainability challenges.

2.2.5 Summary

This chapter established the understanding of business sustainability in the context of this thesis. By following three dimensions of perspective, company purpose and value creation, and company success, the shortcomings of current approaches were identified (see figure 8), and the concept of TBST was introduced as a new view on sustainability to address those shortcomings (see figure 9). Such an understanding of sustainability enables companies to address sustainability challenges effectively and "reconnect[s] […] business to society" (Dyllick & Muff, 2016, p. 161).

Businesses need to change their perspective on sustainability, adopting an integrated view of it rather than regarding themselves as existing in isolation. Companies should adopt a stewardship approach toward nature and society and see themselves as part of a broader system. Another crucial change they need to make is to take on an outside-in perspective, where sustainability challenges serve as a starting point for their business decisions. Moreover, the purpose of business needs to reflect a stronger understanding of sustainability—instead of simply creating financial value, the company's goal should switch to value creation for the common good and to making contributions to sustainability challenges. Lastly, current approaches to accounting and measurement of success fail to appropriately measure the success of a company that aims to address societal challenges. A new way to evaluate company success by including non-economic goals is necessary to facilitate the changes above. Profit serves as a means to an end, not an end in itself. The company's success also needs to be measured regarding its impact on sustainability challenges.

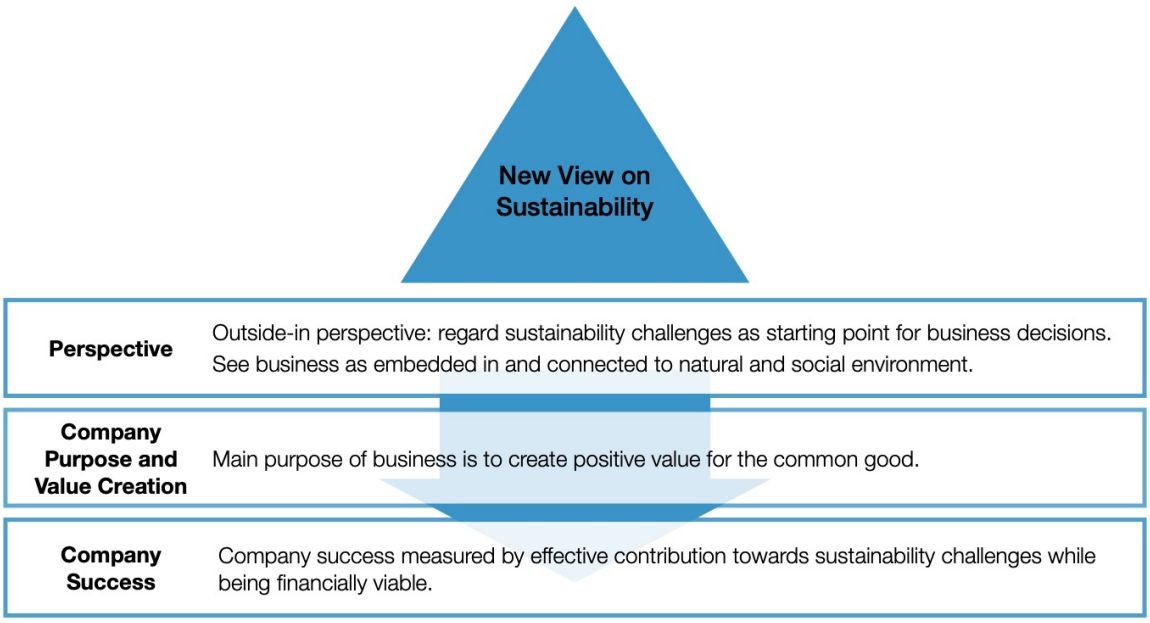


Figure 9: TBST - a new view, source: own depiction

2.3 Business Models

The firm's business model serves as the central unit of analysis for this thesis. I chose the business model perspective for two reasons. First, the business model focuses on the firm's value creation, and second, after the company itself, a firm's network is also part of its business model. Value creation and a network, or stakeholder perspective are two essential themes in the conversation around business sustainability. Therefore, the business model seems a suitable unit of analysis to operationalize TBST at the company level.

This section establishes the basic understanding of traditional and SBMs and aims to lay the foundation for conceptualizing TSBMs. I start by briefly discussing the conventional perception of business models to create financial value. The next section introduces SBMs as a refinement of value creation that considers the environment and society. Then, the business model elements are described. Next, the concept of business models will be delimited against similar constructs such as strategy or a firm's revenue model. And finally, the chapter ends with an analysis of existing patterns and archetypes of SBMs.

2.3.1 Traditional Business Models

This section defines the business model as a unit of analysis, sets the boundaries of the concept, and explains its most essential characteristics. Although there is no agreed upon, single definition of business models, some commonalities between the different approaches exist. Traditionally, the term business model describes how a firm does business and creates value (Lozano, 2018; Teece, 2010). They are "stories that explain how enterprises work" (Magretta, 2002, p. 4). More specifically, Teece (2010, p.172) speaks of the "*mechanism* a firm employs to *create*, *capture,* and *deliver value"*.

Two features of business models make the concept worth studying in a sustainability context: a focus on value and a network perspective. Value in a conventional setting primarily refers to creating financial value, and occasionally includes softer parameters like the satisfaction of customer needs, i.e., the creation of value for the customer (Lüdeke-Freund, Freudenreich, Saviuc, Schaltegger, & Stock, 2017). Although the traditional business model is solely directed at creating commercial value, the concept can also be applied to a broader, redefined meaning of value creation (Laasch, 2017). The possibility of extending the interpretation of value is why business models are popular among scholars interested in social and environmental value creation, in addition to economic value creation (Massa, Tucci, & Afuah, 2017). Thus, a business model offers a focus and a more comprehensive view of the concept of value.

Further, the business model concept sees the firm as part of a wider value network, consisting of stakeholders that range from suppliers or customers to investors and business partners. For analyzing an overarching topic like sustainability, a concept is needed that reflects this interconnectivity of companies with their environment. The business model combines the above elements to form a comprehensive image of the firm's business (Gassmann et al., 2016). As mentioned in the introduction, the business model reaches beyond the boundaries of a firm and allows us to take a network-oriented view (Wirtz

et al., 2016). Other concepts like the firm's strategy are focused mainly on the company itself and its competitive positioning within the market (see 2.3.4.1).

Focusing on a firm's business model leads to a change in perspective. Instead of optimizing a company's existing resources, a business model perspective leads to new ways of applying those (McGrath, 2010). Kim and Mauborgne (2005) call this discovery a "blue ocean" outside of the restriction of existing markets. Recalling the concept of "expanding the pie" (figure 7) earlier (see 2.2.1), business models offer an instrument to move away from trade-off thinking to value creation along all three dimensions of sustainability; economic, social, and environmental. This function is in accordance with findings that credit business models with the power to break away with the old workings of an industry and create a new dominant logic (Teece 2010; Gassmann et al. 2017; Gassmann et al. 2016).

Depending on the understanding and underlying definition of a business model, some frameworks exist to make the concept more tangible. Since the business model is widely used in practice, most frameworks aim for a concrete application to analyze or develop a firm's business model. One tool to provide guidance for businesses to analyze their business model is the Business Model Canvas by Osterwalder and Pigneur (2010). They conceptualize the business model as consisting of nine building blocks: a company's key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure, and revenue streams. Those different building blocks demonstrate how far the business model stretches, reaching from the products and services a company offers to its customers, from the company resources to the suppliers and other key partners.

Another popular framework is the magic triangle of the St. Gallen Business Model Navigator by Gassmann et al. (2017). This framework consists of four dimensions: the customer segments, the value proposition, the value chain, and the company's revenue model. This model is used to describe several recurring, general patterns of business model innovations, which will be introduced in

chapter 2.4. Similar to the Navigator, scholars often conceptualize the business model as representing the value proposition, value creation and delivery, and value capture of a firm (e.g., Bocken, Short, Rana and Evans [2014]; Richardson [2008]). Due to its explicit focus on value, this concept of a business model introduced here will used in this thesis (see also 2.3.2).

Despite the fact that the business model is inherently a systemic concept, its relations to the natural environment or society have mainly been ignored (Lüdeke-Freund, Carroux, et al., 2018; Upward & Jones, 2016). SBMs fill this gap by studying a company's relationship to the natural and social environment.

Some scholars argue that business models serve as a recipe that can be successfully replicated and serve as a source of inspiration for other businesses (Baden-Fuller & Morgan, 2010). A new business model is seen as a recombination of the same, so-called business model patterns, an imitation of what has proven to be successful in the past (Gassmann et al., 2017). Those patterns also exist for sustainable business models. Existing approaches for such patterns will be reflected in chapter 2.3.5.

2.3.2 Characteristics of a Sustainable Business Model

This section extends the understanding of value from the financial to the social and environmental domains. It introduces SBMs as the central unit of analysis for this thesis. After all, "any significant alteration of the dominant economic logic involves, or maybe even necessarily starts from, the application of new business models" (Boons, Montalvo, Quist, & Wagner, 2013, p. 6). I start by describing existing approaches and the missing common understanding of SBM characteristics. It is soon apparent that current practices are unsuitable to incorporate the view of TBST, as they still operate under the assumption of an inside-out perspective.

Although there is no universally agreed upon definition, it is essential to establish a common understanding. Therefore, I draw on the description of an SBM that describes, analyzes, manages, and communicates "(i) a company's

sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries" (Schaltegger, Hansen, & Lüdeke-Freund, 2016, p. 6). This definition also reflects the understanding of the elements of the business model that will be introduced in section 2.3.3 as well as an inside-out approach to sustainability.

Although there is plenty of research on SBMs, the underlying characteristics of SBMs are usually not explicitly specified. Consequently, scholars call upon a "more robust conceptualization of sustainability and SBMs" (Dentchev et al., 2018, p. 700) as well as "conceptual clarification of the SBM at hand—including a depiction of the respective broader systemic sustainability value created, delivered, and captured" (Rauter et al., 2019, p. 257).

The first authors to explicitly address characteristics of SBMs are Stubbs and Cocklin (2008). Through two in-depth case studies of best-case examples in Australia, they identify the constituents of SBMs. They come up with five characteristics. As the first characteristic, the authors point out that the *company's purpose* needs to be defined as achieving sustainability across the social, environmental, and financial dimensions, with success also measured along the triple bottom line. Second, the company needs to *adopt a stakeholder view*, considering their interests instead of just those of the shareholders. Third, *nature is also considered a stakeholder*, and thus the company must actively promote environmental stewardship. Fourth, to drive the transition toward a more sustainable economy, a sustainable company needs to *take a leading role*, driving the changes needed. Fifth, the company must *adopt a system-level perspective* to facilitate all the characteristics mentioned above, driving change on the firm as well as the system level. Yet, because their paper is based on only two case studies, a claim to general characteristics cannot be deduced from it (Upward & Jones, 2016). This study is a valuable first step in the right direction, but further research is needed to uncover underlying characteristics of SBMs.

Although other papers do not explicitly aim to identify characteristics of SBMs, the discussion evolves around common themes, such as the need for a broader understanding of value, of the integration of sustainability at the core of the company, and of the consideration of stakeholder needs.

Harding-Rolls (2018) takes a somewhat traditional approach in stating that an SBM must be *commercially successful*. It needs to deliver value to the customer and generate profit from it. Also, an SBM needs to be what he calls *future-ready*, i.e., resilience in a world of rising and volatile resource and energy prices. And he describes an SBM as being *part of a sustainable society*, which means it must "match with a thriving economy that is delivering social progress within environmental limits"(para.4).

Morioka, Bolis, Evans, and Carvalho (2018) identify three characteristics important for integrating sustainability into a company's business model. First, the values and beliefs of the firm's employees have to be reflected in the *company's purpose*. Second, a company must *proactively* engage in solving sustainability challenges, and third, there is a need for a *systemic change* to enable changes at the company level and to facilitate corporate sustainability.

Short et al. (2014) adopt the perspective of Industrial Ecology, which means that *ecological considerations* are taken *as a starting point* for business model innovation. Setting other concerns than the company's first is already a step toward an *outside-in* perspective. Stål (2018) goes in a similar direction and develops implications for business models from a strongly sustainable entrepreneurship perspective and outlines three characteristics such models need to cultivate. First, they need to be aligned with the dynamics of the biosphere, which means those models need to acknowledge the *limits of our planet*. Furthermore, instead of depleting this critical natural capital, they should add to it. Second, to stay within those limits, the *physical flows of natural resources need to be measured and analyzed*. Currently, only those activities that affect economic value creation, delivery, and capture are considered. Third, he also adds the notion that a *different conceptualization of value* is needed. He argues that

instead of only referring to market values, the term also needs to include politics, society, and the biosphere.

Elkington et al. (2016) call for new models to change the status quo and move toward sustainable development. They call those models *breakthrough models* and identify four distinct characteristics—breakthrough exponentials—as constituents of those models: social, lean, integrated, and circular, discussed below. Furthermore, they propose two mindsets that need to be adopted to introduce such models successfully—thinking exponentially and thinking integratedly. First, apart from thinking sustainably, company leaders need to think exponentially. This term means that an improvement of the current model should be exponential rather than incremental, as a change of our current paradigm requires radical transformation. These new, progressive models entail a fundamental shift from incumbent models, i.e., the ambition should be *exponential* rather than simply gradual improvement. This is similar to what O'Higgins & Zsolnai (2018a) call *transformative*, following the argumentation of de Jong and van Dijk (2015), that this transformative approach involves reframing and even disrupting fundamental beliefs and challenging conventional thinking. The second mindset they propose is thinking integratedly—one should consider financial and extra-financial outcomes of business across social, environmental, and economic dimensions.

The four breakthrough exponentials are social, lean, integrated, and circular. *Social* means that firms must generate positive social impact by delivering extra-financial value together with financial value. *Lean*, which also relates to sufficiency or frugality, can be understood as optimizing value creation across all forms of capital as efficiently as possible. *Integrated* refers to a systems approach, considering dimensions in the present as well as the future, within the company and outside. It "means that succeeding as a business, a company creates restorative value for society and the environment, while seeking to eliminate any activities that undermine our ability to thrive both today and into the future" (Elkington et al., 2016, p. 9). Finally, the authors propose *circularity*,

i.e., the consequent thinking in circles as a characteristic for breakthrough models.

From this short overview on SBM characteristics, it becomes clear that there are many different approaches to sustainable business models but also some commonalities between the different views. Therefore, a systematic analysis of existing approaches to SBMs is needed to uncover their inherent characteristics and provide a comprehensive description of the concept.

One central point of TBST is adopting an outside-in perspective. This means sustainability challenges are taken as a starting point, and business solutions employing a firm's core competencies are developed to tackle those challenges. This perspective is still missing in the conversation around SBMs. They still start from the company's perspective and identify more sustainable options of creating value in all three domains of sustainability. However, they do not connect value creation logic to solving specific sustainability challenges. Also, questions remain about which characteristics a business model needs when taking on an outside-in perspective, and how they change from the previously discussed attributes of SBMs.

2.3.3 Elements of a Business Model

A business model has been described as a "conceptual tool to help understand how a firm does business [and which] can be used for analysis [or] comparison" (Bocken et al., 2014, p. 43). Many frameworks and approaches help show what such a tool might look like; one example, the Business Model Canvas by Osterwalder and Pigneur (2010), introduced in the previous section, is widely used by businesses to analyze or develop their business model.

Due to its popularity, the Business Model Canvas was adapted for sustainability by adding seven questions to the original nine and gauges the business model across the three dimensions of sustainability: economic, social, and environmental to the so called Flourishing Business Canvas (Flourishing Business, 2021). The elements of the canvas are organized around the

dimensions of process, value, people, and outcomes, and entail aspects such as biophysical stocks, stakeholders, value co-creation, or organizational goals. The framework establishes a common language and serves as a design tool for businesses. The *triple-layered business model canvas* (see figure 10) does not simply add sustainability elements to the existing business model canvas. It conceptualizes two additional layers of social and environmental to the original, financially oriented layer of the business model canvas (Joyce & Paquin, 2016). For example, the environmental layer includes elements such as production, materials, functional value, or environmental impact. In contrast, the social layer consists of elements such as governance, societal culture, employees, or scale of outreach.

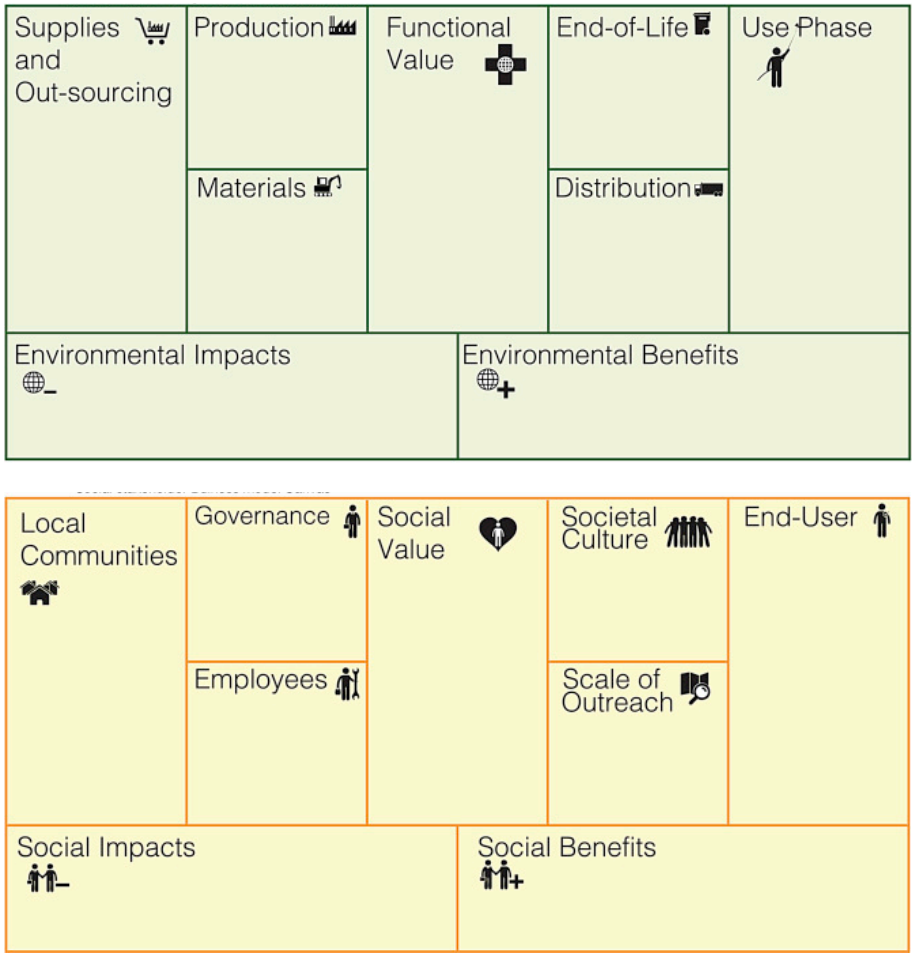


Figure 10: The environmental (above) and social (below) layer of the *triple-layered business model canvas*, source: Joyce & Paquin (2016, p. 1483).

The problem with components-based business models, such as the canvas, is that they do not focus on a business model's network and environment, both of

which are crucial for the conceptualization of an SBM (Boons & Lüdeke-Freund, 2013; Brehmer, Podoynitsyna, & Langerak, 2018), as already established in Section 2.3.1. Furthermore, although these business models include the concept of value in the design tools, it is treated as just one more element rather than being the focus of the business model. To create TSBMs, it is imperative to have the company's broader network, environment, and value flow at the center of the business model to reflect the requirements for TBST.

Traditional business models, as well as SBMs, have been conceptualized to encapsulate a business's value proposition, value creation and delivery, and value capture (Bocken et al., 2014; Richardson, 2008). However, the definition of value and the business model elements differ between a traditional and an SBM. Traditionally, a business model creates value for customers by selling products and services that meet a need. Furthermore, it also creates economic value, i.e., profits for itself. An SBM adds a measurable ecological and/or social dimension to creating economic value (Boons & Lüdeke-Freund 2013). As described in Section 2.3.1, a business model reaches beyond the boundaries of a single firm. This means that SBMs create economic, social, and/or environmental value for various stakeholders (Bocken et al., 2013). SBMs can connect companies with the system level, as society and the environment are considered stakeholders in the broader sense (Boons et al., 2013). The consequences of those differences for the elements of the business models will be discussed in the following sections.

2.3.3.1 *Value Proposition*

The value proposition is a central element to an SBM and "represents the reason of existence of the organization" (Morioka, Bolis, Evans, et al. [2018, p. 734]; see also Morioka, Bolis, & Carvalho [2018] and Randles & Laasch [2016]). In a traditional business model, the value proposition "generally refers to the reasons a customer will value a firm's (proposed) offering" (Richardson, 2008, p. 139), notably its products and services, but also explicitly includes the customer segments a company want to address. However, in an SBM, the value proposition additionally comprises economic, social, and environmental value

that is created for various stakeholders at the individual, organizational, and societal level (e.g., Aagaard, 2019; Bocken, Rana, & Short, 2015; Bocken et al., 2014). Laasch (2017) describes this definition of the value proposition as either *blended* across the three dimensions of sustainability (economic, social, and environmental) or a *shared* between the company and its stakeholders. Freudenreich, Lüdeke-Freund, and Schaltegger (2019) suggest that business models have an individual value proposition for each stakeholder. This value proposition can be developed through a conversation with those stakeholders in a business–society dialog (Morioka, Bolis, Evans, et al., 2018).

Morioka et al. (2018) categorize a company's value proposition into two dimensions: tangible and intangible; products and services represent the tangible dimensions, whereas the "intangible level of value proposition represents the business purpose" (Morioka, Bolis, Evans, et al., 2018, p. 728). For Morioka et al. (2018), the business purpose is the foundation of SBMs (see also Aagaard, 2019). The value proposition determines whether a company can contribute to the SDGs through its products and services, and whether it can contribute toward happiness and the health of humanity and the planet (Laasch, 2017; Morioka, Bolis, Evans, et al., 2018; Wells, 2016).

This thesis bases its understanding of value proposition on Bocken et al. (2015; 2014) and on Morioka et al. (2018). It considers the value proposition of an SBM to consist of the business's products and services, its customer segments and relationships, the values it creates for the various stakeholders, environment and society, and its purpose. Therefore, the value proposition of an SBM is concerned with the question: *What kind of value should be provided to whom?*

2.3.3.2 *Value Creation and Delivery*

The next element of the SBM, as understood in this thesis, is value creation and delivery, which "refers to how the firm brings … value to the customer and other stakeholders" (Kennedy & Bocken, 2019, p. 3). Value creation and delivery to stakeholders includes all the company's activities, resources, capabilities,

channels of engagement, or partners, both within the organization and in collaboration with outside partners (Aagaard, 2019; Bradley, Parry, & O'Regan, 2020; Jonker, 2018; Kennedy & Bocken, 2019). Firms can acquire necessary resources and competencies needed to solve a particular problem and/or create a product or service through collaborative processes (Jonker & Faber, 2019).

SBMs share many elements with traditional business models; however, their perspective is different (Laasch, 2017). An SBM aims to create value sustainably. Stakeholder relationships and aspects of collaboration are at the heart of sustainable value creation and delivery to reflect the systems thinking needed in the context of sustainability (Bradley et al., 2020; Laasch, 2017; Morioka, Bolis, Evans, et al., 2018). Systems thinking could mean identifying business opportunities by using previously unused outputs from one process as input for another. Furthermore, for SBMs, sustainability needs to be integrated into all elements of value creation and delivery (Morioka, Bolis, Evans, et al., 2018), for example, through sustainable supply chain management, eco-design principles, or sustainability reporting. For SBMs, value creation and delivery need to be connected to the goals of the organization. Upward and Jones (2016, p. 107) summarize value creation and delivery to "describe how the 'right' things are to be 'done right' now and in the future."

Building on Bocken et al. (2015; 2014) and Morioka et al. (2018), the value creation and delivery of an SBM consists of the key production factors such as activities and resources, distribution channels, and partners. This element of an SBM is therefore concerned with the question: *How is value created and delivered?*

2.3.3.3 *Value Capture and Recovery*

The last element of a business model describes how the company and its stakeholders capture the created value. It "asks managers to consider how the firm will retain value and how value will be distributed between its stakeholders" (Kennedy & Bocken, 2019, p. 3).

Some elements in an SBM are similar to traditional business models (Morioka, Bolis, Evans, et al., 2018). The revenue and cost model are part of a sustainable as well as a traditional business model (Bradley et al., 2020; Jolink & Niesten, 2015; Richardson, 2008). However, an SBM does not focus solely on economic value creation and capture. The financial perspective has been criticized for not including certain costs and externalities, primarily social or environmental, which are completely neglected from a business perspective (Jolink & Niesten, 2015). Value is understood as positive economic, social, and environmental value. This holistic value is not only captured by the company or realized by the customer but is captured within the whole value network and for various stakeholders of the SBM (Morioka, Bolis, Evans, et al., 2018). It is created and captured as either a direct result of the business activities with direct partners of the focal firm, or as an indirect one by the partners stakeholders. Morioka et al. (2018) refer to the indirect value creation of the partners' stakeholders as *cascaded value*. The direct and indirect effects show the complexity of capturing the value for an SBM and the potential to generate different kinds of value through a company's network.

The success of a traditional value proposition is judged by the customers' willingness to buy the products or services, without which the business model is not profitable (Bradley et al., 2020; Stål, 2018). An SBM, however, offers greater value for its customers as well as for a broader set of stakeholders. Therefore, the success of an SBM must be judged along the lines of social, environmental, and economic value creation (Bocken et al., 2014; Laasch, 2017; Rauter et al., 2019). Furthermore, a value capture needs to be designed to be inclusive, for example, by redistributing economic value to marginalized parts of society or compensating between offerings and subsidizing offerings for people with less purchasing power (Kennedy & Bocken, 2019; Morioka, Bolis, Evans, et al., 2018).

Some researchers use a circular perspective on value creation rather than a linear one, where they believe that "part of the products and services may come back through recovery as material resources or energy" (Lozano, 2018, p. 5).

This recovered value also links back to the value proposition. This thesis adopts a comprehensive understanding of value capture to include value recovery but does not limit the recovery to products or services and includes values of any kind.

Building on Bocken et al. (2015; 2014), Morioka et al. (2018), and Lozano (2018), we can say that value capture and recovery consist of the cost structure and revenue streams; and the direct and indirect social, environmental, and economic value that is captured and/or recovered for the stakeholders, including society. Therefore, this element of an SBM is concerned with the question: *How does the company make money, and how is economic, social, and environmental value captured and recovered by the company and its stakeholders?*

2.3.4 Defining the Scope of Business Models

The term business model is quite popular and often used. However, there has been fuzziness around the phrase, leading to confusion between related concepts such as strategy or the revenue model (Lüdeke- Freund, 2009).

2.3.4.1 *Business Models vs. Strategy*

Distinguishing a business model from a firm's strategy has been the subject of a lively debate with several contradictory views (Seddon, Lewis, Freeman, & Shanks, 2004). Those views range from the strategy and business model being essentially the same or completely discrete, to the business model being part of the strategy and vice versa, to different but overlapping concepts. This debate is now more or less settled, as business models and sustainable business models are recognized as separate research streams (Schaltegger et al., 2016). Still, overlaps with other concepts persist, causing ambiguities.

How a strategy is defined depends on the underlying understanding of strategic management and the corresponding school of thought. Michael Porter, one of the most established scholars in the area, defines strategy as “the creation of a unique and valuable position, involving a different set of activities” (Porter

1996, p. 1). In his view, a firm evolves around its competitive environment and context. After determining its positioning, a company engages in strategy—a set of decisions on its vision and mission, i.e., its purpose, objectives, and goals (Chandler, 1964; Mintzberg, 1994; Porter, 1996).

On the other hand, the business model is the inherent logic of value creation (see chapter 2.3.1). This understanding of the business model seems similar to Porter's strategic position which consists of the right goal, the value proposition and value chain, trade-offs, the fit among strategy elements, and continuity of direction (Porter, 1996; Yip, 2004). However, despite those similarities, the strategy and business model are distinct, albeit overlapping.

Casadesus-Masanell & Ricart (2010), for example, point out that business models are a result or "reflection" of strategy, but the two are not the same concept. Strategy always includes a vision of the future of a company and a positioning within its environment as well as with regards to competition—an outward-looking, external focus (Seddon et al., 2004). On the other hand, the business model describes the logic of value creation within a company (Wirtz et al., 2016) and serves as a means for strategic implementation, linking strategy with its operational implementation. Seddon et al. (2004) refer to this as inward-looking. However, the term inward-looking does not seem well suited to describe a business model, let alone a sustainable one, because it ignores the fact that a business has deep connections with the external network.

The business model is inherently a systemic concept because it considers the entire value network, encompassing external stakeholders such as suppliers or customers. SBMs extend their reach to consider society and the environment in their business decisions. SBMs also stress the collaborative features of a company and seek like-minded partners to increase their societal impact, even among competitors. However, a business model does not consider the competitive or market positioning of the firm, which is one of the main differences to strategy.

A strategy is also concerned with two other aspects of the company, which the business model does not treat as main concerns: competitive advantage and core competencies. Both concepts refer to characteristics of strategy determined in relation to other companies. Barney (1991) connects resources and capabilities with a sustained competitive advantage, defined as "a value-creating strategy not simultaneously being implemented by any current or potential competitors [while] these other firms are unable to duplicate the benefits of the strategy" (p. 102). Those competencies and resources that determine a firm's competitiveness are called core competencies, referring to the "collective learning in the organization" (Prahalad & Hamel, 1990, p. 81). While resources and processes are also part of the business model, the focus is on the resources needed to create a particular type of value (Osterwalder & Pigneur, 2010).

In other views, the business model can be a source of competitive advantage itself (Magretta, 2002). Vice versa, the choice of business model can also be regarded as a strategic decision, locating the business model between strategy and operations of a firm (Lüdeke- Freund, 2009). The business model serves as an intermediary where "the vision of the company and its strategy are translated into value propositions, customer relations, and value networks" (Osterwalder, 2004, p. 17). Due to its network perspectives, the business model integrates different stakeholder views and needs into corporate sustainability actions (Lüdeke- Freund, 2009).

While I adopt the role of the business model as a translator for stakeholder perspectives, the view of a business model to be set between a company's strategy and operations does not seem fitting for this thesis. In fact, it seems more appropriate to regard it as an instrument that connects and integrates company purpose, to deliver value to society, situated at an intermediate level at par with a company's strategy. This puts a firm's strategy at the same analytical level as the business model, and both add value by integrating different aspects and points of view.

The definition of a TSBM is the subject of this thesis. TSS have already been conceptualized by Bereuther (2021) (see chapter 1.1.4).

2.3.4.2 *Business Model vs. Revenue Model*

Traditionally, the term business model is associated with creating financial value. Hence, a business model is frequently used to describe how a firm makes money. But this revenue, or revenue streams, are only one piece of the business model (Gassmann et al. 2017; Osterwalder & Pigneur 2010). In the conversation around sustainable entrepreneurship and social businesses, the term impact model describes the impact a company has on solving a sustainability challenge, i.e., creating social or environmental value. This thesis views a business model to encompass both the revenue and the impact model. It describes the core logic of how value is created in the financial, social, and environmental domains.

This section set the boundaries for the business model and delimited the concept against related approaches such as strategy or the revenue model. The following paragraphs will analyze the existing patterns and archetypes of sustainable business models.

2.3.5 Existing Typologies of Sustainable Business Models

This section reflects upon SBM patterns and types and argues for the use of ideal types in the context of TSBM. Researchers have identified and classified certain types since the beginning of the conversation around SBMs. Such patterns aim to establish a "common language" (Bocken et al., 2014, p. 42), facilitate understanding, and provide guidance for companies to develop sustainable business models. Whereas some approaches aim at giving a general overview of archetypes or patterns (Bocken et al., 2014; Lüdeke-Freund et al., 2018), other authors identify patterns in the context of specific industries such as banking (Yip & Bocken, 2018), or contexts like the circular economy (Lüdeke-Freund, Gold, & Bocken, 2018). This section will concentrate on the general typologies

and will introduce two approaches from academic research and several publications with an application-focused background.

Bocken et al. (2014) are some of the first authors to address sustainable business model patterns. In a review of concepts in the literature and examples from practice, they identify eight *archetypes*, organized into the three groupings of technological, social, and organizational. The eight archetypes are: 1) maximize material and energy efficiency, 2) create value from 'waste', and 3) substitute with renewables and natural processes in the technological group; 4) deliver functionality rather than ownership, and 5) adopt a stewardship role, and 6) encourage sufficiency in the social group; and 7) re-purpose for society/environment, and 6) develop scale-up solutions in the organizational group. The authors further provide different examples for those archetypes. For instance, the archetype *adopt a stewardship role* covers topics such as biodiversity protection, ethical trade, or the promotion of consumer well-being. The concept of archetypes has already been successfully applied in the banking industry (Yip & Bocken, 2018).

Another early approach by Clinton and Whisnant (2014) analyzed 87 companies to identify 20 *business model innovations*. Those 20 business models are sorted into five groups: 1) environmental impact, 2) social innovation, 3) base of the pyramid, 4) financing innovation, and 5) diverse impact. The 20 models focus primarily on application and practice; a concrete description of the applied method is missing. This popularity in practice has led to various other concepts about business models. The so-called *impact business models* are part of B Lab's impact assessment to become a certified benefit corporation or B Corp (B Lab, 2020). In their assessment guidelines, B Lab describes 24 distinct impact business models, organized by governance, workers, community, environment, and customers. The types range from providing basic services to the underserved in the customer category to producer cooperatives in the works group. A similar practice-oriented approach explicitly focuses on social businesses, particularly start-ups (Seefeld, Haferkamp, & Friese, 2021). Likewise, they identify 24 basic patterns of business impact models in 11

categories: 1) connecting players, 2) employment, 3) special needs, 4) raising awareness, 5) community-based business, 6) innovative solutions, 7) donations, 8) systemic innovation, 9) supplier empowerment, 10) unused resources, and 11) impact support. Seefeld, Haferkamp, and Friese's model focuses on social businesses, hence many of the examples relate to the creation of social value. This is different from the 20 models by Clinton and Whisnant, where revenue patterns are also incorporated. Overall, these examples demonstrate the wide variety of approaches to classifying SBMs.

This plethora of advances, terms, and methods has led to a dissipation of the field, and there exists a need to establish a common understanding of types, patterns, or archetypes of SBMs. Furthermore, many existing approaches have not applied a rigorous method to identifying patterns but have followed a commonsense approach. Lüdeke-Freund, Carroux, et al., (2018) address this gap and identify 102 patterns that are partly overlapping or even duplicates, and synthesize them into 45 patterns of sustainable business models. They differentiate them based on the primary value they create in the economic, social, and ecological dimensions, and sort the 45 patterns into 11 groups: 1) pricing and revenue, 2) service and performance, 3) access-provision, cooperative, 4) financing, 5) giving, 6) social mission, 7) eco-design, 8) closing-the-loop, 9) community platform, 10) cooperative, and 11) supply chain. The patterns provide helpful guidance for companies on creating value in the different domains. This approach provides a comprehensive overview of existing approaches to classifying SBMs. Additionally, the patterns have also been translated to different contexts, such as the circular economy (Lüdeke-Freund, Gold, et al., 2018). However, for the context of TBST, these approaches do not seem fitting.

The above sustainable business model patterns mostly have a binary approach to sustainability, meaning a business model is either sustainable or not. Only the patterns developed by Lüdeke-Freund et al. (2018) differentiate between different forms of contributions. A group of experts assigned points to each pattern, depending on their assessment of how that specific pattern creates

ecological, social, and/or economic value. The patterns were not explicitly linked to a sustainability challenge and the approach used an inside-out perspective on corporate sustainability. The micro-level sustainability efforts of the company are still disconnected from the larger macro-economic sustainability challenges.

Additionally, patterns and archetypes—as per definition—aim for general applicability (Lüdeke-Freund, Bohnsack, Breuer, & Massa, 2019; Lüdeke-Freund, Carroux, et al., 2018). Conversely, Dyllick and Muff (2016) state that the potential to contribute toward solving sustainability challenges varies widely between different industries and companies. If a certain type of business model creates value for the common good depends on various factors. Therefore, this thesis will not adapt a pattern perspective but instead suggest using the term *ideal type* to describe a context-dependent, TSBM classification.

3 Methodology and Research Process

This chapter provides insight into the underlying research paradigm and the methodology that follows from this understanding of science. It situates the thesis in applied research, pursuing a qualitative, normative methodology where empirical analysis is enriched by conceptual developments and vice versa. The second part of the chapter elaborates on the research design and the overall research process. Figure 11 shows how the research questions evolve out of the research needs.

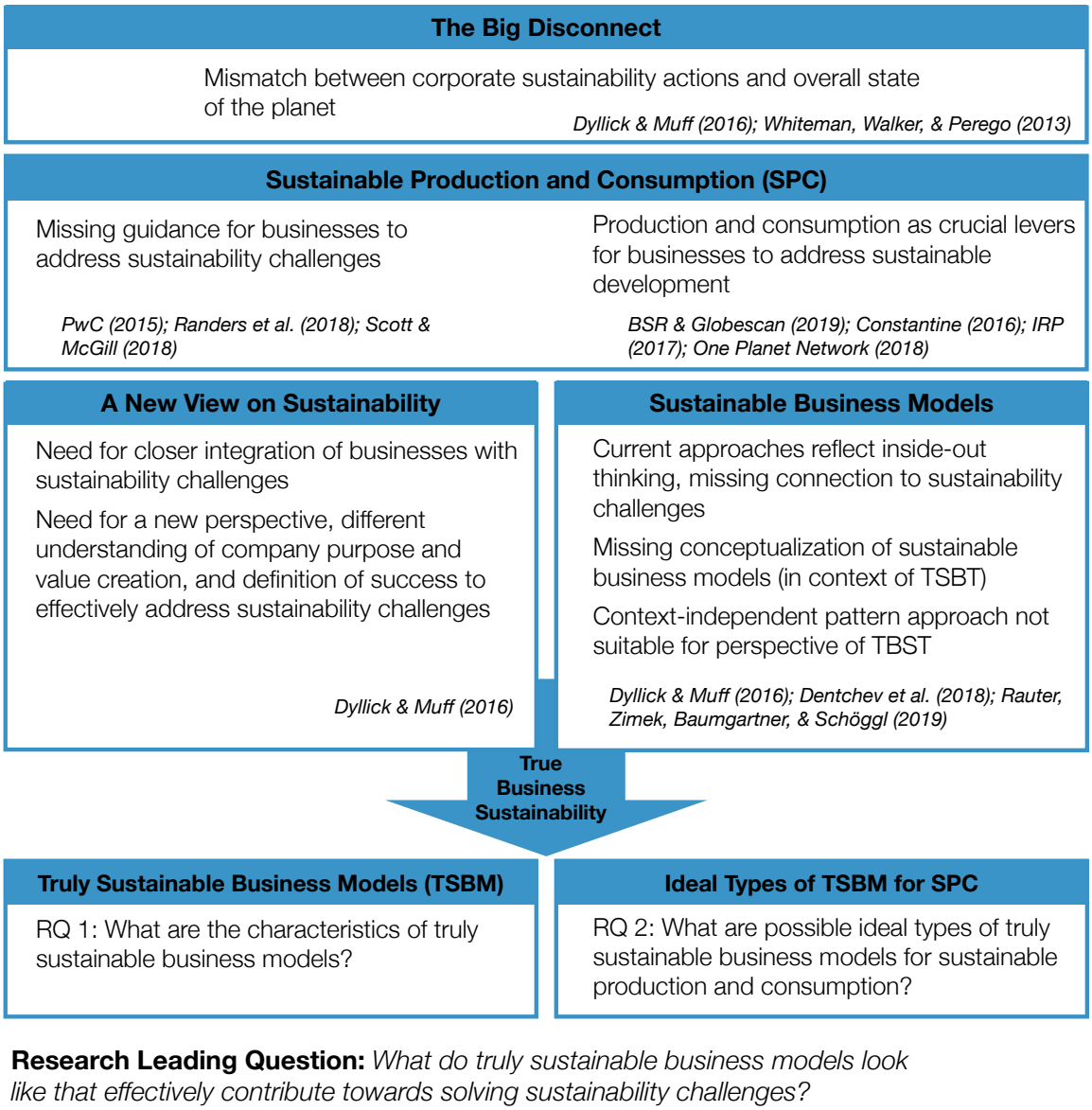


Figure 11: Logic of the dissertation, source: own depiction

This process evolves around five points:

1. The identification of characteristics for (truly) sustainable business models.
2. The synthesis of characteristics and conceptualization of TSBMs.
3. The identification of relevant challenges for SPC.
4. The identification of ideal types of TSBMs for SPC.
5. The illustration of the findings through case studies of three best practice examples.

This thesis proposes TSBMs as tools to bridge the big disconnect by reconnecting the business with the macro level and help transform the current economic paradigm. The purpose of this dissertation is to advance the understanding of true business sustainability (TBST) in the context of business models and to provide a sound conceptualization of such models. Ideal types of TSBMs illustrate what a TSBMs might look like in practice and serve to inspire and trigger transformation and change. The conceptualization of TSBMs and ideal types aims to provide guidance to businesses on how to approach sustainability challenges by taking an outside-in perspective.

In investigating the five points raised above, this thesis is guided by the overarching question of *what truly sustainable business models that effectively contribute to solving sustainability challenges look like*. To further structure the research process, two clear research questions are posed:

> *RQ1: How can a truly sustainable business model be conceptualized?*
> *RQ2: What are ideal types of truly sustainable business models for sustainable production and consumption?*

3.1 Methodology and Research Approach

This chapter describes the underlying understanding and approach to research and methodology on which this thesis is based. The paradigm of science and research influences the choice of methodology and methods and thus shapes the whole research setting (Cohen, Manion, & Morrison, 2011). Therefore, those

assumptions need to be clarified to make the research process as transparent as possible.

This thesis regards management as an *applied science* (Ulrich, 1982). Applied science aims to shape scientific guidance and support for practice through methods, models, and decision tools (Dyllick & Tomczak, 2007). As opposed to *theoretical research*, applied science does not aim to provide theoretical explanations based on historical data but aims to shape new contexts and realities. Such an active view of academic research has been called for in a sustainability context most of all (Zsolnai & Thompson, 2020). Schneider et al. (2020, p. 491) suggest that "academia should engage in the quest for, and envisioning of, alternative economic paradigms that safeguard the needs of all people, promote a less unequal world and ensure the re-entering of a safe operating space for humanity." Sustainable development itself can be regarded as a research paradigm with the explicit normative outcome of social equity and planetary well-being (Bansal, 2019).

Constructs like the SDGs always include a normative assumption about a good and a bad state of the world, stating how things *should* be instead of describing underlying mechanisms of the studied phenomena. Arguing for sustainability implies that a more sustainable state is always, ceteris paribus, preferable over an unsustainable one. In fact, Myrdal (1971) suggests that a value-free social science is impossible, even in non-normative approaches. Hence, to adhere to scientific standards, all underlying assumptions must be declared whenever a normative postulation is made about the state of the world or a unit of analysis.

This thesis follows calls made by scholars to regard solutions to real-world sustainability challenges as a "moral obligation" of research (Ripple et al. [2017, p. 8], see also Ferraro, Etzion and Gehman [2015]; George, Howard-Grenville, Joshi and Tihanyi [2016]). This thesis is based on the understanding that businesses have the ability as well as obligation to use their resources and capabilities to solve sustainability challenges and create a just world where humans and nature exist in harmony.

Successful applied science research connects rigorous theoretical discussion with relevant practical findings. Figure 12 shows quality criteria for successful applied research in sustainability management that will guide this thesis. First, the research questions need to be *relevant*, which means they address critical problems. Not only are the research questions rooted in the lack of knowledge in one specific stream of literature, they were deduced from problems arising in the real world, namely the sustainability challenges we collectively face and the big disconnect (see chapter 1 and 2.1). Second, the research findings need to be *beneficial*, which means that the results should not only contribute to a theoretical discussion but also generate a positive impact for businesses and society. Such a problem- or impact-focused approach ensures high relevance for practice while adhering to scientific standards, ensuring scientific rigor (Bansal, 2019; Dyllick & Tomczak, 2007). Third, knowledge needs to be generated in a *scientifically sound* way, i.e., it must be valid and verifiable.

Criterion	Description	Application in Thesis
Relevant	The research focuses on critical problems that are relevant for a real-life context.	Phenomenon of big disconnect and sustainability challenges as starting point for the investigation.
Beneficial	The generated knowledge benefits businesses as well as society.	Underlying, normative understanding of businesses to serve the purpose of creating value for the common good.
Scientifically Sound	The generated knowledge is scientifically sound, valid, and verifiable, and advances the scientific dialogue.	Research methods chosen to match the research questions. Research process and assumption made transparent.

Figure 12: Quality criteria for successful applied research in sustainability management, source: own depiction based on Dyllick and Tomczak (2007); Zsolnai and Thompson (2020)

Ontologically, this thesis is based on the understanding that reality only exists in a constructed, case-dependent context, created by the interaction of humans, companies, or other entities. Simultaneously, the concept of sustainability exists at the intersection of natural and social science, spanning a bridge between the absolute truth and objectivity of the natural world and the contextual one of human interactions. Therefore, inter- and transdisciplinary research that integrates findings from natural and social sciences is significant for sustainability (Sharma, 2019). This thesis also considers findings from natural

science in the analysis of sustainability challenges and the conception of TSBMs (see chapter 2.1).

Qualitative research is particularly well suited to explore concepts that emerge from the interactions of individuals or groups, such as at companies and in social relations (Flick, 2018). Similar to Dyllick and Rost (2017), an analytical, i.e., empirical, as well as a normative, conceptual perspective is applied and combined as depicted in figure 13. For example, expert interviews refine the results from conceptual work and vice versa.

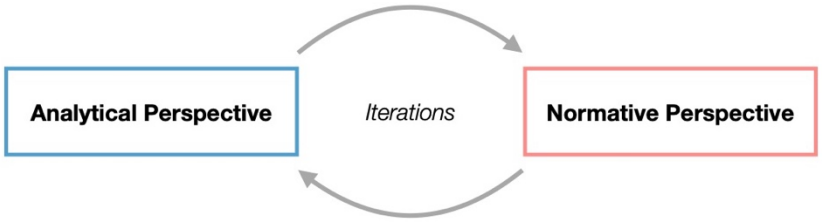


Figure 13: Iterations in the research perspective, source: own depiction

Such an iterative change in perspective is suited for this research project for several reasons. Adopting a normative approach allows us to aim for a high level of sustainability. A continued focus on analyzing past approaches is inadequate to master the sustainability challenges of the future. An iteration between empirical analysis and normative conceptualization allows us to build on past insights but also incorporates a visionary outlook on future possibilities, ensures an ambitious approach toward sustainability, and allows us to incorporate interesting findings from "outside the box." Such an iterative approach is frequently applied, for example in grounded theory and theorizing in general (Shepherd & Suddaby, 2016; Strauss & Corbin, 1994).

From a pragmatic view, a quantitative analysis would be inefficient since very few companies employ business models that qualify as truly sustainable. Other methods that capture the subjective, context-dependent nature of TSBMs are needed. The case study method is suited to "conduct[ing] an in-depth exploration of intricate phenomena within some specific context" (Rashid, Rashid, Warraich, Sabir, & Waseem, 2019, p. 1). This research method will be one of the analytical pillars of this thesis and is specifically suited for the chosen

research questions. This match between method and questions is a quality marker for qualitative research (see figure 12).

Conceptual research, as opposed to empirical research, has no specific, universally agreed-upon quality markers, approach, or recipe (Cornelissen, 2017; Jaakkola, 2020; Shepherd & Suddaby, 2016). However, there are some basic criteria to conduct good conceptual research. First, the research design must be *clear* and *logical* (Jaakkola, 2020), and the choice of methods and analysis, including the overall argumentation, must be *justified* and *transparent* (Shepherd & Suddaby, 2016; Weick, 1989). For this thesis, each step of the research process will be thoroughly explained and the entire process made as transparent as possible to "explicate the role of each element in the paper" (Jaakkola, 2020, p. 20). Another aspect to judge the quality of conceptual findings is if they produce interesting results: "A good theory is a plausible theory, and a theory is judged to be more plausible and of higher quality if it is interesting rather than obvious" (Weick, 1989, p. 517). Since it is difficult to judge objectively whether something is interesting or not, this thesis aims to generate interesting results through a high level of novelty and relevance for practical application.

This section situates the thesis in the realm of applied science and elaborates on its consequences for the methodology. The following chapter builds on those assumptions and introduces the research design, process, and methods.

3.2 Research Design, Process, and Methods

The first stage of the research aims to conceptualize a TSBM. An analysis of existing literature and concepts on sustainable business models identifies characteristics of SBMs through inductive analysis. The literature is extended by integrating TBST through normative conceptualization. Expert interviews serve as a refinement and enrichment of the results from the previous analysis and add a practice perspective.

Second, ideal types for TSBMs are identified. This stage will again combine analytical elements with normative conceptualization. Lastly, the findings from the previous stages will be illustrated by studying three companies with a business model that can be characterized as truly sustainable. Those three selected case studies show what such ideal types of TSBMs can look like in practice.

3.2.1 Characteristics and Framework for Truly Sustainable Business Models

The analysis in section 2.3 points out that an integration of characteristics of (truly) sustainable business models is a valuable contribution to the conversation on SBMs and TBST. A classification approach is used to identify and synthesize characteristics of TSBMs. Bailey (1994, p. 1) defines a classification as "the ordering of entities into groups or classes on the basis of their similarity."

Two points further stress the need for a classification and characterization of SBMs. First, a classification is a "fundamental building block of research" in the social sciences (Mattingly & Berman, 2006). A robust and unambiguous understanding is called for to further develop and conceptualize the concept of SBMSs (Dentchev et al., 2018). Second, a classification of characteristics is needed before we can assess the impact of SBMs on SDGs or other sustainability goals (Rauter et al., 2019).

The characteristics of SBMs and TSBMs were identified through an integrative literature review. Those characteristics were synthesized to create the necessary characteristics for TSBMs. The result of this conceptual step is a framework for TSBMs, the *truly sustainable business model petal* (see figure 14 for an overview of the research process).

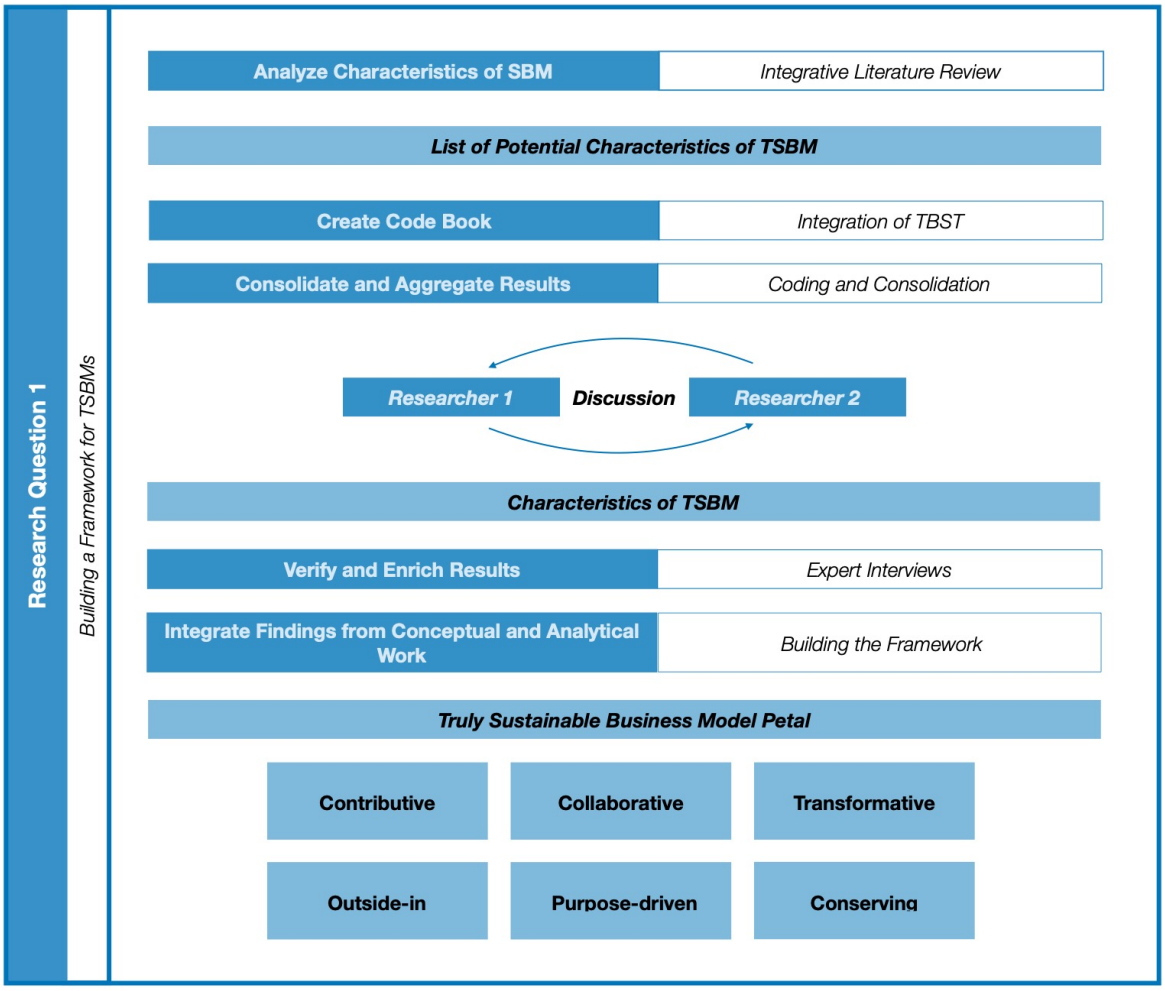


Figure 14: Research process - conceptualizing TSBMs, source: own depiction

3.2.1.1 *Integrative Literature Review*

The literature review as a research method has several strengths making it suitable to address the research questions of this thesis. Since sustainability research combines insights from natural and social sciences, and the literature review can give an overview of and connect interdisciplinary research, it is particularly well suited as research method for this topic (Snyder, 2019). Furthermore, it lays the foundation for theory development by synthesizing existing knowledge and analyzing it on a meta level (Snyder, 2019; Webster & Watson, 2002).

There are three main types of literature review as a research method (Snyder, 2019). The first is a *systematic* literature review and is suited to answer very specific questions. The second is a *semi-systematic* review and it provides a good

overview of a topic and how it developed over time. The third, an *integrated* or *critical* review, is best used to synthesize and critique existing knowledge, combine different perspectives and merge the findings into new theoretical models.

Torraco (2005, p. 356) defines "the integrative literature review [a]s a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated." The goal is not to give an overview about every article published on SBMs, but to synthesize the most relevant and interesting findings. Contrary to a structured literature review, integrated reviews have no strict guidelines to follow. The selection of materials is not restricted to research articles and can incorporate publications such as books or reports. However, to ensure rigor and quality, the selection and review process must be transparent (Snyder, 2019).

An integrative literature review has already been applied in similar contexts. For example, Sandberg (2021) applies this method to identify and categorize consumption changes for sustainability. Overall, this approach is a suitable tool to identify characteristics and to develop a framework for TSBMs.

To begin with, the existing literature on SBMs was scanned to identify the characteristics and a description or definition of an SBM. I started with a keyword search on "sustainable business models" via EBSCO and Google Scholar. After identifying the most cited and relevant papers, their references were checked, and other potentially interesting papers identified. After a closer look at the selected papers, some were excluded, mostly because they focused on innovation and transformation aspects, which is explicitly not part of this thesis. Afterwards they were sorted into two categories according to their potential interest and relevance to the topic: high and other.

Research Field	Number of Publications Included in Analysis
Sustainable business models	93 (44 high relevance, 49 other)
True business sustainability	4

Table 1: Overview of the research fields incorporated in the integrative literature review, source: own depiction

The highly relevant papers were thoroughly read and all citations referring to potential characteristics of SBMs transferred into an Excel sheet[7]. A short preliminary characteristic or "code jotting" (Saldaña, 2015) was assigned to the description (see Table 2). Code jotting is more open than the code developed later for the code book and it serves to capture some ideas for further study. Coding the obtained data is a first step in the analysis and defined as a "process of labeling and categorizing" (Flick, 2018, p. 423). Such open, inductive coding originates from grounded theory, but is now generally established as a suitable method to structure, condense, and link data (Gläser & Laudel, 2009a; Saldaña, 2015). Coding is a back-and-forth process between the data and development of concepts, following the overall approach of this thesis of iterations between empirical and conceptual analysis.

Papers of low relevance were scanned but yielded no additional insight, pointing to a theoretical saturation from the highly relevant papers. This review also led to the identification of some new relevant papers, which were added to the sample in a back-and-forth process of reviewing literature and refinement of the literature list. Appendix Ia provides an overview of the papers that were considered in this step. The result of this analysis produced a list of potential characteristics for TSBMs (see Table 2 for an example).

Code Jotting	Description of Sustainable Business Model	Author
Choose economically viable, most sustainable option	BST 3.0 turns around the traditional "inside-out" approach used by business and applies an "outside-in" approach, much like social businesses do. The organization starts out by reviewing pressing sustainability challenges that society faces, and then	Dyllick & Muff (2016), p.166

[7] The full list of code jottings and citations is provided via the electronic downloads

instead of most profitable	engages in developing new strategies and business models that overcome these.	
Focus on stakeholders	An explicit focus on stakeholder needs emphasizes the importance of businesses responding to their ecosystem and the primary stakeholder—such as shareholders, employees, and customers—as well as secondary stakeholders such as NGOs in order to gain and maintain legitimacy and to obtain a license to operate with regard to various sustainable issues.	Aagard, 2019, p. 4
All stakeholders need to be considered, even inconvenient ones	Identifying stakeholders is the first step in using the stakeholder value creation framework. It is crucial to include all relevant stakeholder groups, even those who tend to create inconveniences and those who do not seem to fit any of the five generic categories identified in the framework.	Freudenreich, Lüdeke-Freund, & Schaltegger, 2019, p. 10
Outside-in	Companies are invited to start thinking and acting from the outside-in and to focus on contributing to solving sustainability challenges, even if there are more economically attractive but unsustainable alternatives available. As long as such outside-in strategies provide not only a positive contribution to sustainability challenges, but also offer a satisfactory economic value for the shareholders, such a strategic approach is feasible for commercial businesses. Such strategies then fall into the domain of shared value creation.	Dyllick & Muff (2016), p. 170; Dyllick & Muff (2017), p. 24

Table 2: Example of identified characteristics and code jottings, source: own depiction

3.2.1.2 *Coding and Consolidation*

A successful classification is *exhaustive*, meaning all characteristics belonging to one category are listed, and *mutually exclusive*, which means a characteristic is only added to one category (Bailey, 1994). The list of characteristics from the integrative literature review is quite extensive and many characteristics are similar or overlapping. Thus, the characteristics need to be consolidated into categories or codes. This consolidation is done by two researchers in parallel and the results are discussed to strengthen the findings. Figure 15 shows an overview of the coding process.

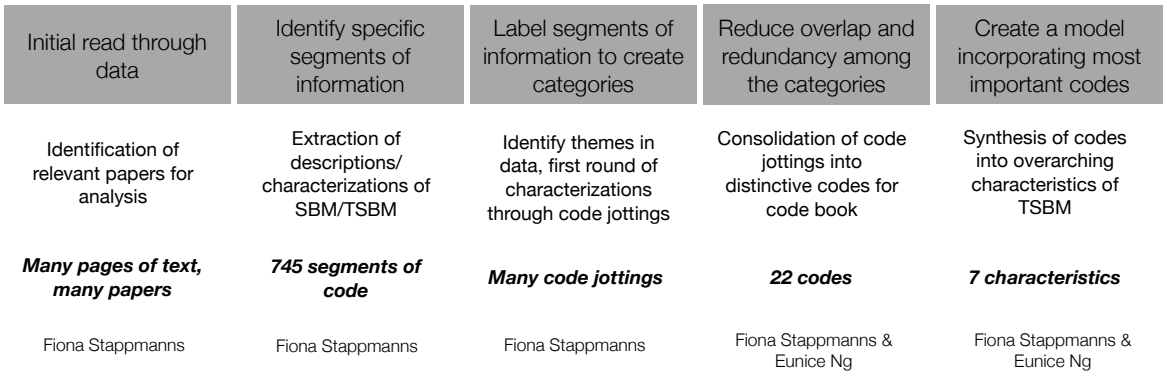


Figure 15: The coding process in inductive analysis, source: own depiction, based on Creswell, 2002. Figure 9.4, p. 266, in Thomas, 2003)

As the leading researcher, I went through the extracted data to develop a code book. A code book or coding frame is a "well defined system of categories" (Flick, 2018, p. 423). It serves as an orientation for the second researcher and includes a description of the codes (see appendix Ib). A code refers to a "word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based […] data" (Saldaña, 2015, p. 3).

In developing the codebook, a special emphasis was given to the integration of TBST, based on the analysis of the four published articles[8] by Dyllick and Muff (2016, 2017), Dyllick and Rost (2017), and Moratis and Melissen (2020). Since the concept of TBST is the foundation of this thesis, the characteristics for a TSBM must be drawn from the list of characteristics for TBST. Developing the 22 codes in the codebooks based on this concept ensures that the criteria for TBST are met. For example, *engage on different levels* is a characteristic of a truly sustainable business, which also fits the characteristics of TSBMs. The final codebook was conceptualized through an iterative process between the characteristics extracted from the SBM literature and an analysis of TBST (see figure 16).

[8] As of September 2020

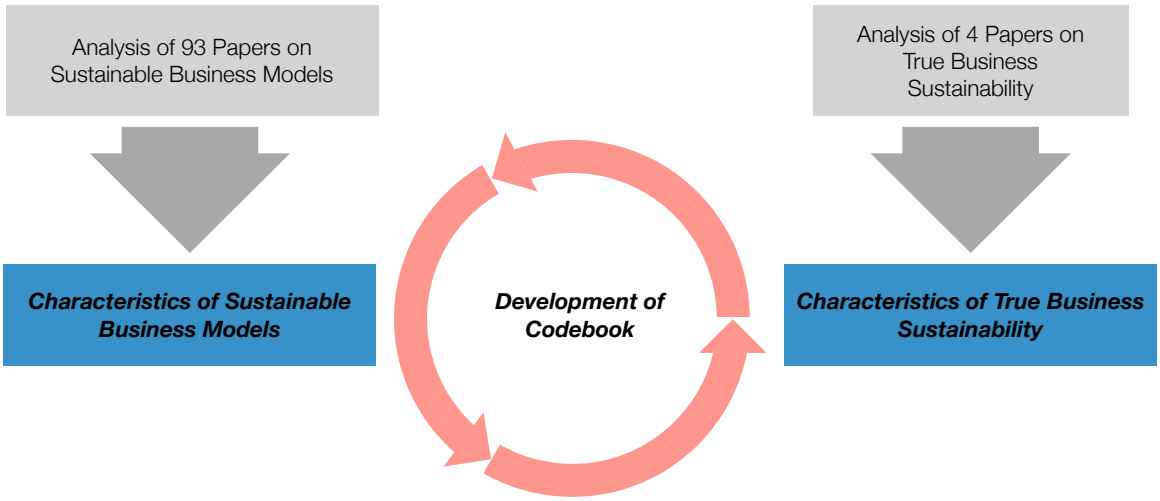


Figure 16: Development of codebook through integration of TBST, source: own depiction

Although the literature review uncovered many interesting characteristics, not all of them meet the criteria set for TBST, i.e., positive value creation and an outside-in perspective. However, "the role of the literature review is to unravel the components of a concept or phenomenon and it must sometimes reduce or exclude incommensurable elements" (Jaakkola, 2020, p. 21). Even though current approaches do not reflect a TBST thinking, they can yield interesting insights for this thesis. For example, papers that analyzed case studies of best practice examples or sustainable start-ups uncovered very relevant and novel characteristics that are relevant for a TSBM. Going back and forth between the empirical data and the normative requirements of TBST lead to a refinement of the codebook. The second researcher was also involved in this development and provided valuable feedback in discussing the feasibility and applicability of the codebook.

The final 22 codes range from *positive environmental, social and economic value is created for the common good* to *the whole value network is sustainable*. They aim to provide a short description of the longer passages extracted from the different publications (see table 3 for an example).

Code/Characteristic	Description of Sustainable Business Model	Author
Sustainability challenge as starting point for business	BST 3.0 represents a very different strategic approach to business. It turns around the traditional "inside-out" approach used by business and applies an "outside-in"	Dyllick & Muff (2016), p. 166

	approach instead, much like social businesses do. The organization starts out by reviewing pressing sustainability challenges that society faces, and then engages in developing new strategies and business models that overcome these.	
Emphasis on collaboration	With rising global sustainability pressures, collaboration between firms and other key stakeholders increases in importance. Value is no longer created by firms acting autonomously, but by firms acting together with external parties through informal arrangements or formal alliances. The business model may be viewed as a new unit of analysis in business, which takes into account these collaborative ties.	Bocken, Short, Rana, & Evans, (2014), p. 43
A wide range of stakeholders is considered	Identifying stakeholders is the first step in any analysis using the proposed stakeholder value creation framework. It is crucial to include all relevant stakeholder groups, even those who tend to create inconveniences and those who do not seem to fit any of the five generic categories identified in the framework.	Freudenreich, Lüdeke-Freund, & Schaltegger (2019), p. 10
Sustainability rather than profitability as primary success factor for business decisions	It invites companies to start thinking and acting from the outside-in and remain focused on contributing to solving sustainability challenges, even if there are more economically attractive, but unsustainable alternatives available. As long as such outside-in strategies provide not only a positive contribution to sustainability challenges, but also offer a satisfactory economic value for the shareholders, such a strategic approach is feasible for commercial businesses. Such strategies then fall into the domain of shared value creation.	Dyllick & Muff (2016), p. 170; Dyllick & Muff (2017), p. 24

Table 3: Examples for characteristics from codebook, source: own depiction

The second researcher, Eunice Ng, who is highly experienced in qualitative coding, went through the data and assigned the code independently, using the code book as a reference. Bringing in a second coder ensures that all aspects of the descriptions are covered by the respective codes and avoids arbitrary assignments of codes to descriptions.

A sample of 20 different excerpts was initially coded and the results compared and discussed to establish a common understanding. After benchmarking, the rest of the data was divided into six batches. Coding was done independently, and the results were compared and discussed after each batch. Instead of calculating a numerical agreement measure, the goal was to reach consensus,

which was achieved through the discussion of the diverging codes (Harry, Sturges, & Klingner, 2005).

In a second step, similar characteristics and codes were grouped and synthesized. A synthesis means "weaving together elements and ideas from the literature into a unique synthesis model" (Torraco, 2016, p. 64). For the example above, synthesizing meant that *emphasis on collaboration* and *a wide range of stakeholders is considered* were grouped in the category *collaborative,* referring to the importance of collaboration among a wide range of stakeholders. This step was conducted by both researchers independently, after which the results were discussed and synthesized. The 22 codes from the code book were synthesized into seven characteristics of TSBMs, which were discussed with the experts (see appendix Ic for the seven original characteristics). Later, based on the feedback from the experts, the characteristics were reduced to six (see figure 23).

3.2.2 Ideal Types of Truly Sustainable Business Models

This step serves to illustrate the framework of TSBMs, established in stage 1 through *ideal types*. Ideal types introduce theoretical propositions or models of social situations and processes, such as sustainable business models (Stubbs & Cocklin, 2008). They are a "representation of the idea of a sustainable organization" (ibid., p. 107), which focus on what might exist rather than on the status quo. Like the business model itself (see for example business models as a recipe; Casadesus-Masanell & Ricart, 2010), such ideal types can serve as design guidelines or blueprints for transforming organizations into a more sustainable state. These ideal types were derived from the challenges of production and consumption (see figure 17).

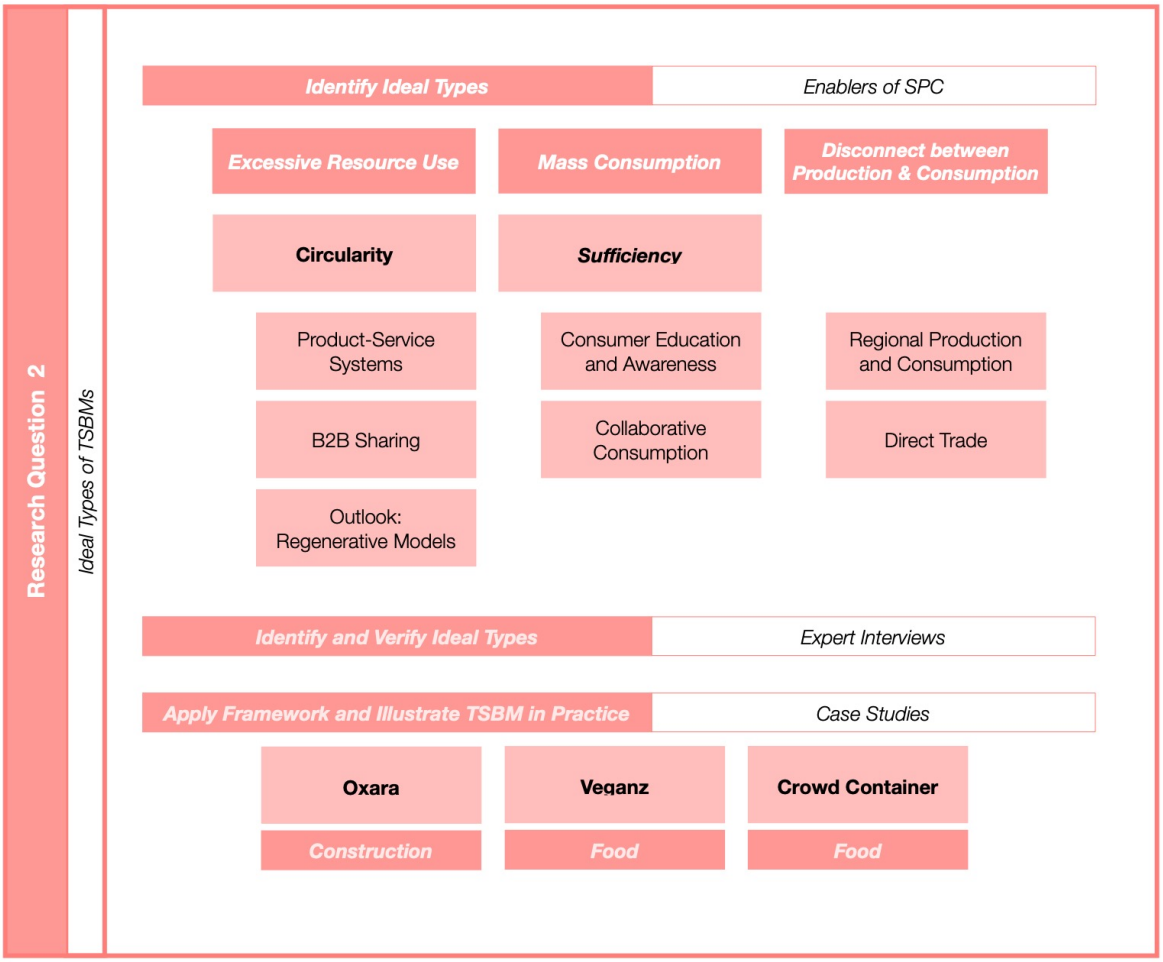


Figure 17: Research process - identifying ideal types of TSBMs, source: own depiction

Recent publications have tried to identify different types of SBMs, referred to as archetypes (Bocken et al., 2014; Yip & Bocken, 2018), business model innovations (Clinton & Whisnant, 2014), or patterns (Lüdeke-Freund, Bohnsack, et al., 2019; Lüdeke-Freund, Carroux, et al., 2018; Lüdeke-Freund, Gold, et al., 2018). From the analysis in chapter 2.3.5, it became clear that those studies do not differentiate between the various types of contribution toward sustainability challenges but rather try to paint a picture of all the available solutions. This thesis aims to illustrate only a few selective cases rather than present the general landscape. This approach is in keeping with that of Stubbs and Cocklin (2008), who illustrate a possible future, depicting how things should be from a normative standpoint instead of focusing on the mainstream today.

SPC and the respective challenges set the context for this thesis. As a first step, a literature analysis identified several *challenges for SPC* on a variety of levels, reaching from the use of non-renewable resources and a linear production system, to unsustainable consumption patterns, and global inequality. I discussed and added to those initial challenges in the expert interviews and then condensed and grouped them into three overarching categories: *excessive use of resources*, *mass consumption patterns*, and a *disconnect between production and consumption* (see figure 18).

Unsustainable production and consumption patterns lead to problems such as climate change, biodiversity loss, pollution, or global inequality (see chapter 2.1 for an in-depth analysis). An analysis of the most important challenges in the literature as well as the interviews with the experts helped identify the enablers for sustainable transformations (see figure 18). These enablers built the foundation for identifying *ideal types of TSBMs* that could help transform the way we produce and consume today (see figure 19).

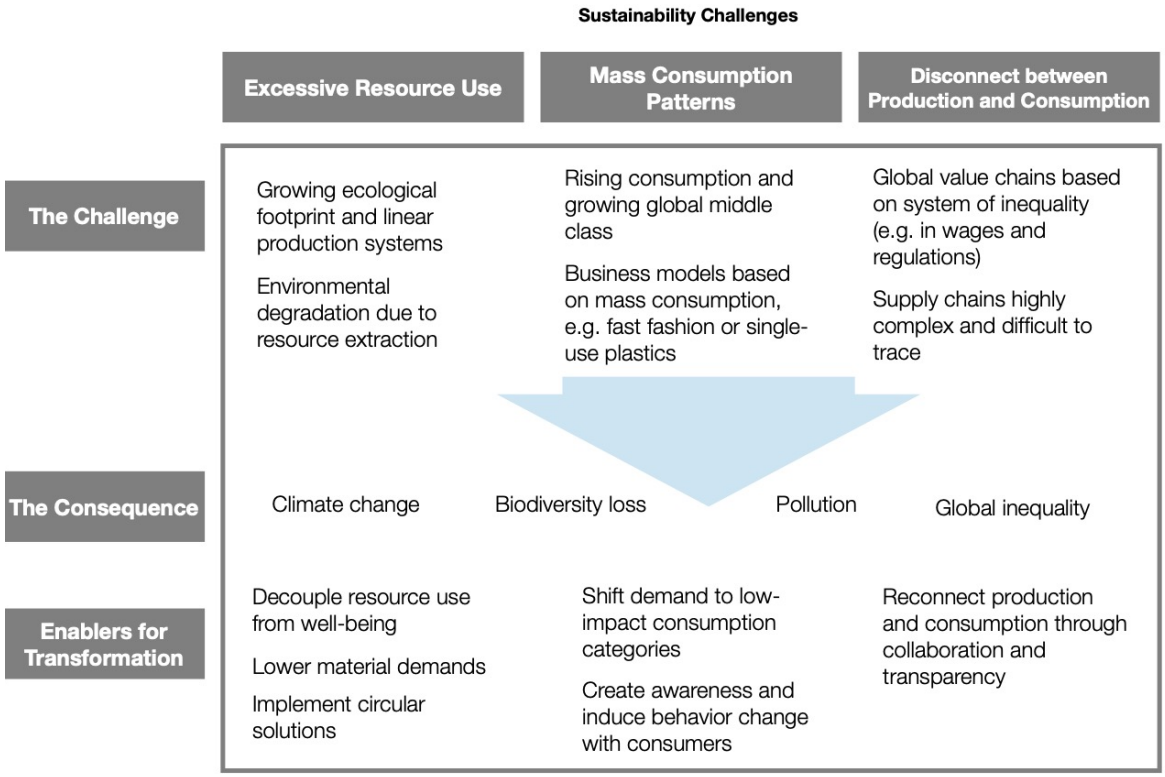


Figure 18: Challenges, consequences, and enablers for SPC, source: own depiction

These enablers range from abstract ideas like a decoupling of economic growth or resource and human well-being to more concrete examples like "green supply chains" or "buy responsibly" (Lebel & Lorek, 2008; Lorek & Fuchs, 2013).

The enablers were conceptually matched with suitable business model types or patterns (see figure 19). Those ideal types stem from a literature analysis and the discussion with the experts. Production and consumption are interlinked and consequently the ideal types might also intersect. Therefore, the ideal types were grouped under the challenges they primarily aim to solve, while recognizing possible linkages to the other two challenges. This list of ideal types does not aim to be exhaustive but rather serves to illustrate a number of potential options for tackling challenges of SPC.

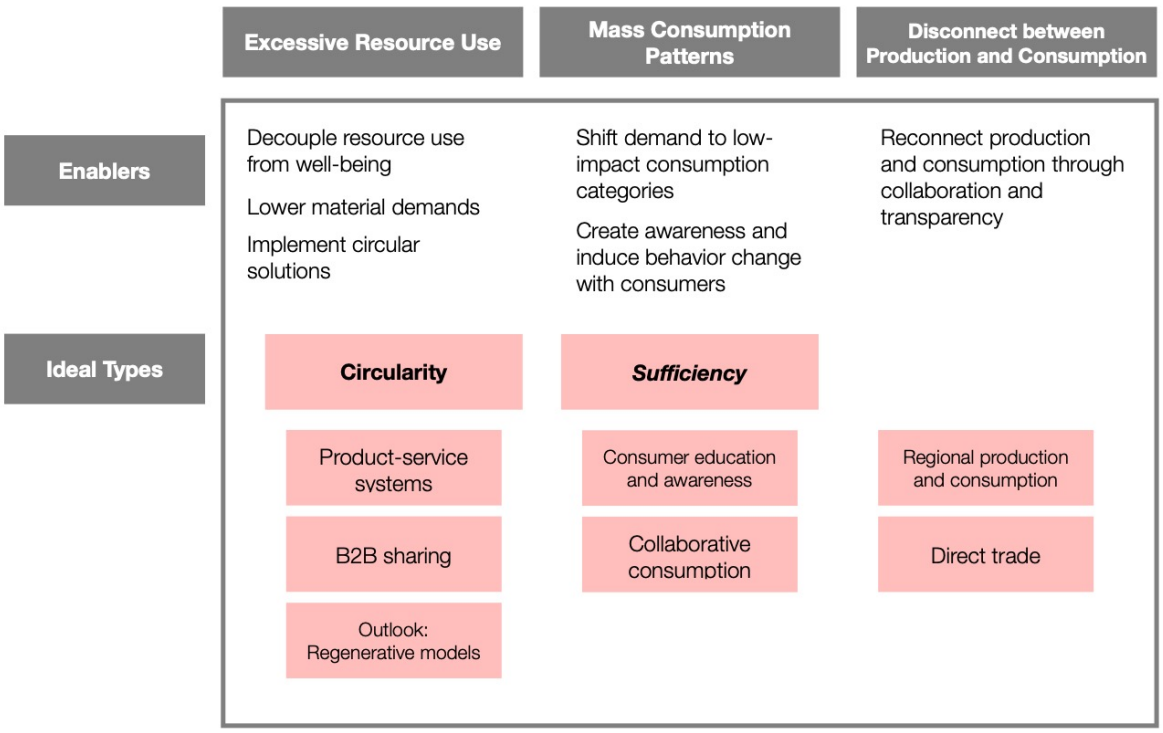


Figure 19: Matching ideal types with enablers for SPC, source: own depiction

The analysis in 2.3.5 showed that TBST is context dependent. What qualifies as truly sustainable in one context might not fulfil the same criteria in another. This context-dependency is known from analyses of, for example, the sharing economy, whose overall sustainability impact was found to be highly complex (Frenken & Schor, 2017). The three case studies were conducted to illustrate how a TSBM might work and operate in a specific setting (see 3.2.4).

3.2.3 Expert Interviews

Expert interviews serve to ensure that the results of conceptual development are of a practical nature (Flick, 2018). There is no standardized procedure for conducting expert interviews (Kaiser, 2014) and the process is dependent on the individual aim and design of the research subject. Experts are defined as people "who possess special knowledge of a social phenomenon which the interviewer is interested in" (Gläser & Laudel, 2009b, p. 117), or take on an expert role in the research area.

Methodologically, expert interviews can be structured into three different types: *exploratory*, *structuring*, and *theory-generating expert interviews* (Bogner & Menz, 2009). The *exploratory* interview is used to gain an oversight of a topic, helps to map the research topic, and generates hypotheses. The *structuring* expert interview also aims to access knowledge and focuses on "knowledge of action and experience, which has been derived from practice, is reflexively accessible, and can be spontaneously communicated" (Bogner & Menz, 2009). In the *theory-generating* interview, the expert's actions or decision-making are the starting point for theory development. This thesis adopts a structuring approach due to its focus on knowledge developed from practical experiences. The experts themselves are not the subject of study; they are seen as providing information on the topic to be investigated (ibid.).

The role of expert interviews in the context of this thesis is twofold (see figure 20). On the one hand, they serve to verify the findings on the characteristics of TSBMs and enrich them with standpoints from practice to ensure their practical relevance. On the other hand, the experts also provide input on ideal types of TSBMs. The findings from the conceptual phase were verified and discussed, and possible further ideal types were identified. The expert interview thus also serve as an expert validation of the topic, which is a form of triangulation as it provides different perspectives on the research subject (Flick, 2018).

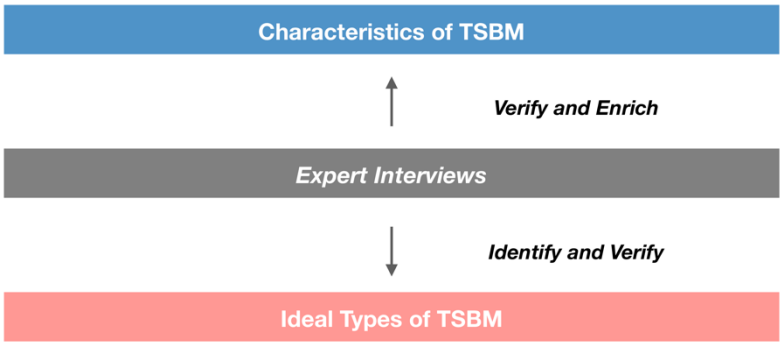


Figure 20: Role of expert interviews in overall research process, source: own depiction

The quality of the data obtained from the interview depends heavily on the quality of the expert, i.e., his or her knowledge and skills on the relevant topic. Therefore, the experts must be carefully selected (see figure 21 for the selection criteria). For this thesis, the experts needed broad experience of and knowledge in business sustainability.



Figure 21: Purpose of interviews and selection criteria for experts, source: own depiction

Another quality marker for the expert was whether they worked at an institution which aims to transform our current economic system or the way we do business toward more sustainability. Figure 22 provides an overview of the selected experts, the company or institution they work for, and their role within the company.

	Organization	Position	Category
Olmar Albers	öbu	Director	NGO/Think-Tank
Dr. Manuel Braun & Marlene Kick	SYSTEMIQ Ltd.	Engagement Manager, Associate	Consultancy
Prof. Dr. Stefan Hankammer	Alanus University of Arts and Social Science	Professor for Sustainability Management & Social Entrepreneurship	Academia
Josephine Herzig	B-Lab, Switzerland	Co-Director Engagement Programs	NGO/Think-Tank
Connie Low	Impact Hub Basel	Managing Partner	Social Entrepreneurship
Maike Kauffmann	Stiftung Verantwortungseigentum	Research and Think Tank	Social Entrepreneurship
Patricia Matzdorf-Gobeli	WWF	Senior Partnership & Project Manager	NGO/Think-Tank
Tobias Meier	Ecos	Project Leader Team "Green Economy"	Consultancy
Dr. Ralf Nacke	Gemeinwohlökonomie Schweiz	Board of Directors	NGO/Think-Tank
Markus Sauerhammer	Social Entrepreneurship Netzwerk Deutschland	Chairman	Social Entrepreneurship

Figure 22: Overview of experts, source: own depiction (see appendix IIa for more detail)

There are different styles of interviews, for example unstructured, semi-structured or structured (Bloomberg & Volpe, 2019). The expert interview is a specific form of semi-structured interview (Meuser & Nagel, 2009). Semi-structured interviews are used to explore a topic in more detail with a specific focus, guided by pre-formulated questions (Bloomberg & Volpe, 2019). This interview guideline aims to translate the research questions and theoretical assumptions into concrete questions for the experts (Kaiser, 2014). They structure the questioning process but also leave enough space for the expert to cover unexpected points and go into detail on the topic (ibid.). The questions for these interviews were based on an analysis of the research questions and findings from the previous steps. The complete interview guideline and the procedure to develop the questionnaire can be found in appendix IIb and c.

To allow for an in-depth exploration of the topic, a generous timeframe was set, with the interviews lasting between 30 and 75 minutes. Due to the pandemic, all interviews were conducted online via zoom, transcribed, and then analyzed in Atlas.ti. The four dimensions of analysis from the interview guideline (see appendix IIb) were used to structure the evaluation. The most interesting findings from the interviews were extracted, matched, and integrated into the

conceptualization of TSBM characteristics. Through the feedback of the experts, one of the original seven dimensions was consolidated. Moreover, the remaining characteristics were further adapted to better reflect the requirements of TBST. Especially the focus and emphasis on positive value creation instead of a reduction of negative value had to be sharpened. For example, the original category of harmful activities are compensated was changed to regeneration from harmful activities. The remaining six characteristics build the *truly sustainable business model petal* (see figure 23).

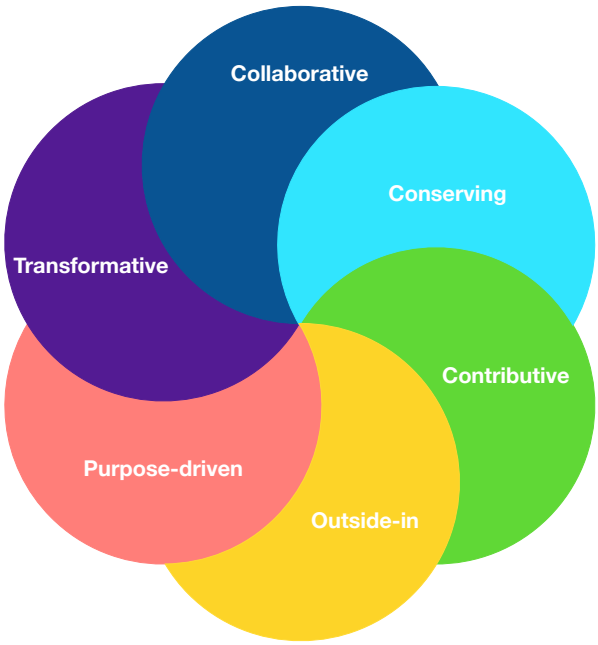


Figure 23: The truly sustainable business model petal, source: own depiction

3.2.4 Illustrating Cases

Three case studies build the last step in the research process. Case studies are especially suited to explore a new research area (Eisenhardt, 1989), and as a research method they are used to establish deep insights into a phenomenon and study it in its real-life context (Baxter & Jack, 2008; Bloomberg & Volpe, 2019; Yin, 2018). The case studies serve two purposes in this thesis. First, they aim to *illustrate* what a TSBM would look like in practice. This purpose stands in contrast to the usual practice of case studies serving an explanatory or even theorizing purpose. Here, the case study has more of a storytelling, inspiring

character. This is in line with Flyvbjerg (2006), who argues that humans learn through cases. He also points out that concrete, context-dependent knowledge can be more valuable for building knowledge than the search for generalizable, predictive theories. Additionally, successful examples inspire others to imitate the business model (Gambardella & McGahan, 2010). The second purpose of the case studies in this thesis is to serve as an opportunity to test and employ the developed framework for TSBMs in practice.

Because the case studies only have an illustrative purpose, the sampling is not random but follows a purposeful approach (Fletcher & Plakoyiannaki, 2009) (see figure 24).

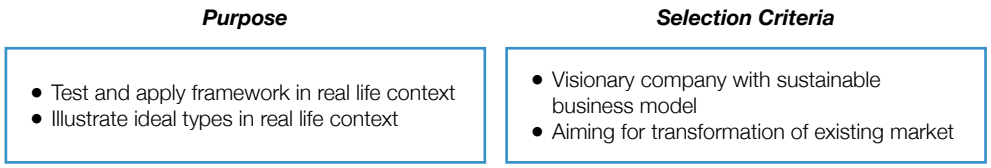


Figure 24: Selection criteria for case studies, source: own depiction

The aim of this research step is to show what a TSBM might look in practice and to illustrate some of the ideal types of TSBMs identified in the previous step. The primary criterion for selecting a case is that its business model should clearly address one or several sustainability challenges in the realm of SPC. Furthermore, the company's goal needed to be the transformation of an existing market. The companies fulfilling these criteria needed to showcase different industries or industry contexts, different kinds of companies, and the different aspects of SPC. Theoretically, the cases would also need to match the three sustainability challenges that were previously used to deduce the ideal types of TSBMs (see figure 19 and 25).

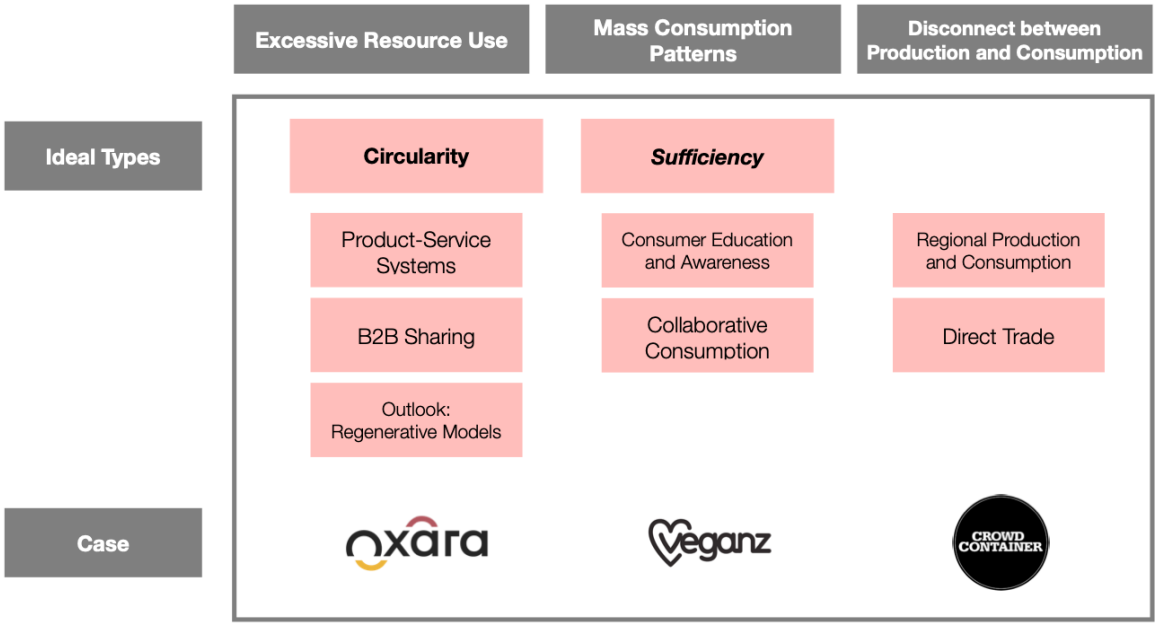


Figure 25: Matching the cases to the ideal types of TSBMs, source: own depiction

After gathering archival data about the company, i.e., the company website or newspaper articles, an interview with a company executive was conducted (see figure 26). In the interview, the business model of each company was analyzed regarding the addressed sustainability challenge(s), the value proposition, value creation and delivery, and value capture (see appendix IIIb for the case interview material).

The *truly sustainable business model petal* captures the ideal characteristics of such a model. Therefore, the characteristics of the company's business model were discussed as an ideal state and the case company compared against them.

	Interview Partners	***Sustainability Challenge(s)***	***Ideal Type***
Oxara	Gnanli Landrou, PhD, Co-founder Dr. Roland Weippert, Strategy	CO2 emissions from cement, lack of affordable housing, especially in Africa	Circularity
Veganz	Moritz Möller, Chief Marketing Officer	Excessive meat consumption	Consumer education and awareness
Crowd Container	Tobias Joos, Founder and CEO	Challenge of Selling Smallholder Products	Direct trade

Figure 26: Company cases, sustainability challenges, and ideal types of TSBMs, source: own depiction

The first company case is the start-up Oxara. It produces sustainable building materials, such as cement or bricks, out of excavation material. It identifies itself as a purpose-driven company with the goal "to provide sustainable and

affordable housing all over the world" (Oxara, 2020a). Oxara aims to solve two distinct sustainability challenges: the unsustainability of the construction industry and the lack of affordable and safe housing. This company was chosen to illustrate an ideal type in the realm of circular business models, more specifically closing the loop. As regenerative business models are still very rare, a start-up with a high motivation to constantly improve with regards to sustainability was chosen as it may one day follow such an approach.

Another industry that plays a special role in the transformation of our current production and consumption system is the food sector. It is responsible for approximately 30% of worldwide energy consumption and 22% of greenhouse gas emissions (United Nations, 2020). The next two companies operate in the food sector but address different challenges and operate in different contexts.

Veganz is a vegan German food brand that aims to change our food consumption. The excessive consumption of meat and other animal products is the cause of a variety of sustainability challenges, ranging from deforestation to vast GHG emissions. The company educates and informs its consumers to integrate animal free products into their diet and rethink the way they consume food.

Crowd Container connects consumers and producers of food through a direct trade model. On the environmental side, it only includes products that are climate friendly. On the social side, it ensures that the working conditions of food production meet certain standards and every producer is paid a fair price.

One theme that emerged from the expert interviews was the role of inspiring best practice cases in convincing other companies to pursue an ambitious sustainability goal. By showcasing successful examples of a TSBM in practice, this thesis also aims to inspire other businesses to follow suit and show what is possible.

Chapter 3 connects the research questions and purpose with the underlying assumptions of scientific research, its ontology, epistemology, and methodology. This thesis is situated in the realm of applied science, and its

findings will not only advance theoretical understanding but also have relevance for practice. The second part of the chapter describes the research design and process that was followed to answer the research questions. An iteration of normative conceptualization and empirical analysis led to the development of the *truly sustainable business model petal*. Those TSBMs are illustrated through ideal types in the context of SPC. By matching enablers for SPC with the appropriate types of business models that are suited to address the challenges of SPC, ideal types of TSBMs were introduced. Those ideal types were not exhaustive but were chosen to illustrate what a conceptualized TSBM might look like. Lastly, best practice examples were introduced in three exemplifying case studies.

4 Sustainable Production and Consumption

SPC were identified as important areas for businesses to contribute toward sustainable development. The analysis in chapter 2.1 unveiled the significant impact of business activities on climate change, biodiversity loss, pollution, and inequality. Chapter 2 also showed that concrete tools and guidance on how firms could connect their activities to macro-level challenges are mostly missing. This thesis suggests adopting an outside-in perspective to address this disconnect between micro and macro-level sustainability. Chapter 4 takes such an outside-in perspective and analyzes the specific sustainability challenges related to SPC in greater detail. The analysis aims to establish the context for developing TSBMs and regards sustainability challenges as opportunities for business. The examples for such opportunities in this chapter can serve as an inspiration and starting-point for businesses who want to embark on the journey toward solving sustainability challenges.

The chapter starts by analyzing three challenges of SPC, already introduced in chapter 3: excessive resource use, mass consumption patterns, and the disconnect between producers and consumers. After analyzing the three selected challenges, the barriers and drivers for SPC are discussed briefly.

The overarching challenges presented in this chapter are diverse and vary even within the same industry or across local settings. Therefore, an industry example serves to contextualize and illustrate a specific challenge and make it more concrete. This context-dependence becomes further apparent with the ideal types and cases presented in chapter 6.

The second part of this chapter identifies the opportunities for businesses that arise from solving sustainability challenges. First, enablers for SPC are identified, followed by the introduction of outside-in opportunities for businesses. Those opportunities also build the foundation for the ideal types of TSBM that are further elaborated in chapter 6.

4.1 Challenges of Sustainable Production and Consumption

Production and consumption are interlinked, and they intersect at many places. For example, high demand from the consumer side will lead to increased production and vice versa. Nevertheless, despite this intertwining and due to the high impact of each topic, especially for businesses, each topic needs to be analyzed separately (Muff, Kapalka, & Dyllick, 2017). To structure the discussion and incorporate an outside-in perspective, this chapter will analyze one challenge focused on the production -excessive resource use- and one challenge evolving around consumption -mass consumption patterns. The third challenge addresses the disconnect between current production and consumption patterns.

An example for each challenge gives concrete form to the more general points and illustrates the diversity of sustainability challenges that companies are confronted with. Certain industries play a prominent role in transitioning toward sustainable production and consumption patterns as they have the largest environmental footprints. Interviewee D suggests we "look at the ones with the largest environmental footprints; I think those are definitely the ones where one should start." Most experts mentioned the food sector as an industry with a high potential to make a difference (A, B, C, D, and E). In general, those industries with the "highest leverage with customers" (Interviewee A) were deemed important by the experts, such as textiles or housing. These findings correspond with the analysis of the industries responsible for climate change or biodiversity loss (see chapter 2.1.). Therefore, the examples were chosen from such high impact industries: Food waste serves as an example of the unsustainable use of resources, fast fashion serves as an example of mass consumption patterns, and cocoa illustrates the disconnect between production and consumption and the challenges of GVCs.

4.1.1 The Challenge of Excessive Resource Use

Excessive use of resources was identified as one of the challenges in the transformation toward more sustainable production. This challenge will be analyzed based on three aspects: the growth rate of resource consumption, the role of rebound effects, and problems arising from the current linear production system, before closing the section with a concrete example of how excessive resource use manifests in the specific context of food waste.

4.1.1.1.1 Growth Rate of Resource Consumption

We are not living within the carrying capacity of our planet (Club of Rome & Potsdam Institute for Climate Impact Research, 2020). The global material footprint has more than tripled since 1979 (WBCSD, 2021), while the economy has grown five times (UNEP, 2021c). The material footprint refers to "the total amount of raw materials extracted to meet final consumption demands" (UN, 2019b). A closely related concept is Earth Overshoot Day, a day each year when all the resources our planet can produce and absorb within a year overshoot Earth's capacity to replenish itself (Global Footprint Network, 2021b). Each year, this day constantly moves backward, from December 28 in 1970 to July 29 in 2019. In 2020, this day moved significantly forwards to August 22 due to the economic effects of the COVID-19 pandemic (WWF, 2021b). However, it can be assumed that this will not be a lasting effect. This rate of resource consumption is only possible because we finance its growth through the massive use of non-renewable resources and the degradation of nature (Dasgupta, 2021b).

Since the 2000s, the rate at which natural resources are extracted has further accelerated (UN, 2019b). The projected business-as-usual scenario sees an increase in global GDP by 2.2% each year and a respective increase in the material footprint of 110% until 2060 (IRP, 2019; UNEP, 2021b). In the same scenario, GHG emissions will also increase by 43% and agricultural land by 20% at the cost of further land and forest loss. Furthermore, the growth rate of natural resource extraction is higher than that of the population and GDP, an

opposite development to the decoupling of economic growth and the global material footprint (UN, 2019b).

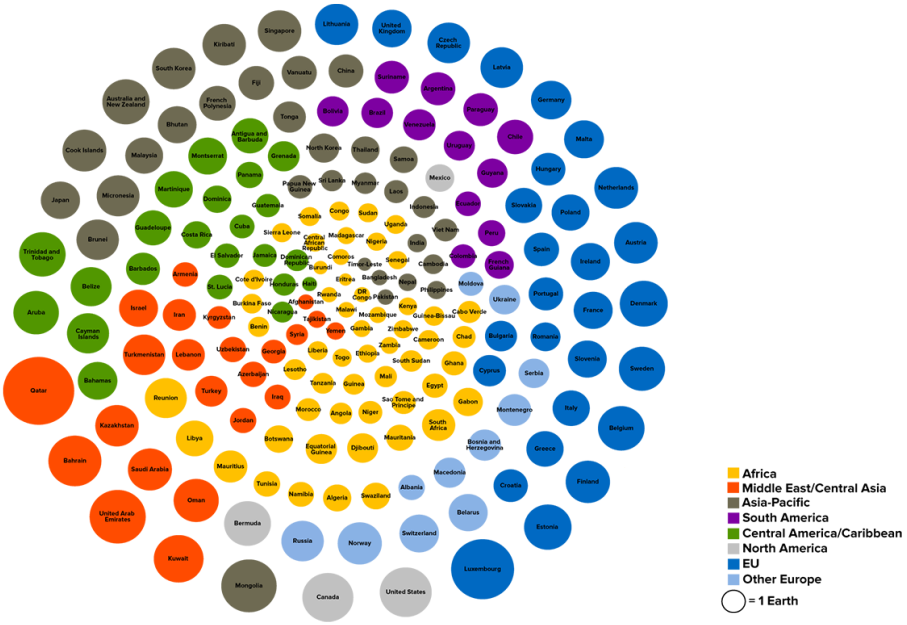


Figure 27: Comparison of ecological footprints worldwide, source: Global Footprint Network (2021a, fig. 1)

However, the benefits and burdens of our current production system are unequally distributed across the globe. Figure 27 shows the disparity of the ecological footprint between different countries. While most of Africa or the Global South in general is well within the carrying capacity of one planet, countries of the Global North use resources excessively. This challenge arising from the unequal distribution of benefits and environmental and social impacts will separately be discussed in chapter 4.1.3.

4.1.1.1.2 Rebound Effects

The concept of green growth promotes resource efficiency as a solution to the rising consumption of those resources, for example, through waste or energy reduction (OECD, 2011). The idea driving this concept is that innovative new technologies, processes, and products enable SPC, which is why it has also been referred to as "technological optimism" (Lorek & Fuchs, 2013, p. 41). However, increasing resource efficiency and therefore resource use leads to lower prices which in turn lead to an increase in demand. Resource efficiency has been only

improving slightly over the past years, by far not enough to counter the increase in demand - a phenomenon referred to as the *rebound effect* (UN, 2020a). Interviewee D shares the concern and states: "One of the largest challenges for SPC is the rebound effect." Therefore, a more radical transformation instead of an incremental adaption is necessary to face production and consumption challenges and overcome rebound effects (see also the efficiency-based view of sustainable development in chapter 2.1).

4.1.1.1.3 Linear Production System

Most of the sustainability challenges on the production side are associated with our current linear production system, which still predominantly follows a take-make-waste approach. Such a linear mindset assumes an infinite supply of resources, although resource shortages are already looming in the horizon. The experts agree with this assessment. "The full circularity of the system is fairly low," states Interviewee D. Interviewee A regards the implementation of a circular economy as the biggest challenge in production and consumption. The flaws of this linear production and consumption system are best illustrated with two examples: planned obsolescence and plastic waste.

Many products are inherently designed to be disposed of after a short time of use, consist of cheap materials that break easily, or are not reparable. This phenomenon is referred to as *planned obsolescence*, which means "a business strategy in which the obsolescence (the process of becoming obsolete, that is, unfashionable or no longer usable) of a product is planned and built into it from its conception, by the manufacturer" (Kramer, 2012, p. 3). Examples range from fashion to razor blades, plastic cups, straws, and electronics. Electronic waste is the fastest-growing kind, increasing by 38% in only one decade, from 2010 to 2019. Although the recycling rate is above the average of 8.6% for all materials, only 20% of electronics enter back into the loop (Circle Economy, 2020; UN, 2020a).

Waste also means an economic loss. Chapter 2.1 already touched on waste pollution and found that 95% of plastic packaging is only used once (Ellen MacArthur Foundation, 2016). This wasteful behavior means that USD 80–120 billion of packaging value is lost each year and is a threat to nature because 32% of this packaging does not end up in collection systems. The associated external costs from these after-use effects plus the costs of GHG emissions during the production of the packaging materials exceed the profit of the whole plastic packaging industry. In developing countries, between 400,000 and one million people die each year due to improperly managed plastic or other waste (Williams et al., 2019). Often due to the lack of proper waste disposal systems, plastic waste gets burned, emitting GHG and toxic fumes. There is some progress in awareness toward those problems; the European Commission, for example, has banned the ten most often found single-use plastic products in the marine environment (European Comission, 2018).

Undoubtedly, plastic packaging also has advantages and will be challenging to replace. It requires less energy to recycle, is lightweight, and protects products during transport, for example, reducing food loss in the supply chain (Ritchie & Roser, 2018). However, the problem of wasteful resource use must be addressed. It should no longer be customary to dispose of broken products or packaging without thinking of the consequences or about re-use. Currently, ownership and responsibility for products are transferred to the customer at the point of sale, who often lack knowledge about proper disposal. The transformations needed to change those patterns will be addressed further in this chapter.

Box 1 is an example of the unnecessary waste of resources that poses a significant challenge for SPC: food loss and waste.

Box 1 - Insight: The Challenge of Food Loss and Food Waste

The worldwide food industry has a significant impact on various environmental and social challenges through its resource intensity. It is responsible for 26% of man-made GHG emissions, a number that increases by 5% when including non-food agriculture and the

effects of deforestation (Poore & Nemecek, 2018). Around 43% of desert- and ice-free landmass is used for agriculture, 87% of this for food production. Additionally, agriculture is also water-intensive, and a high share of food is produced in regions at risk of water scarcity, causing 90 to 95% of scarcity-weighted water use worldwide (Poore & Nemecek, 2018). Food production influences and is heavily influenced by climate change, further aggravating the problem in the future (Kornhuber et al., 2020).

Around one-third of food in the value chain is wasted (FAO, 2011). On the one hand, food loss means losing economic value. Each Swiss household is estimated to dispose of CHF 600 worth of food each year (WWF, 2021a). On the other hand, it also represents a considerable waste of the resources that went into producing the food (FAO, 2011).

While it is a problem throughout the whole value chain, most food gets lost or wasted at the start, i.e., the production, or at the end, i.e., the consumption (Hegnsholt, Unnikrishnan, Pollmann-Larsen, Askelsdottir, & Gerard, 2018). Food waste can happen for a variety of reasons (FAO, 2021b). The products can be thrown away because they do not meet requirements regarding size, shape, or color. If a product is close or even over its "best before" date, retailers cannot sell it anymore and customers tend to throw it away. Numbers from the United Kingdom show that one out of five unnecessarily discarded food items is thrown away due to this label (Gladek et al., 2016). Finally, leftovers from restaurants or private kitchens are other potential sources of food waste. The amount of food waste also largely differs across regions. Especially at the consumer level, there is a significant difference between countries in the Global North and the Global South (see figure 28).

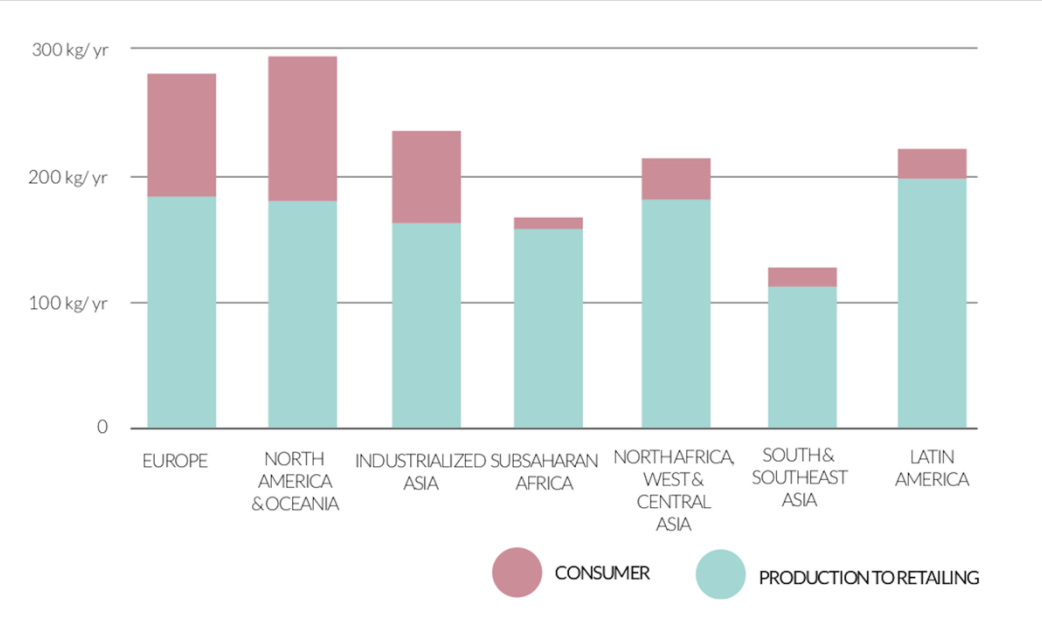


Figure 28: Per capita food losses and waste by region (kg/year), source: (Gladek et al., 2016, p. 61)

This importance was also recognized by dedicating an SDG to the topic of food waste. SDG 12.3 states: "By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses" (UN, 2021c). Chapter 4.2 will explore opportunities arising out of reducing food waste.

4.1.2 The Challenge of Mass Consumption Patterns

Unsustainable production practices are only one side of the coin and are often mirrored in sustainable consumption[9] patterns, leading to a vicious reinforcing cycle. The problems arising from excessive use of resources are equal to consuming the products those resources are made into. Private consumption accounts for a large share of overall consumption. For example in the Euro area, 55% of GDP in 2017 were related to individual's purchasing decisions (European Central Bank, 2018).

This chapter shortly reflects on the role of consumers in those patterns by describing the problem of the attitude–behavior gap, and the need to recognize a shared responsibility between producers and consumers. The section introduces fast fashion as an exemplary symptom for mass consumption patterns and behavior.

4.1.2.1 *The Attitude–Behavior Gap*

Companies are often challenged with steering consumer behavior in the desired direction; in this case, toward pro-environmental and social purchasing behavior. Such ethical consumption considers environmental and social concerns to be at par with personal preferences (Lades, 2014). Influencing consumers toward those patterns starts by educating them about the social and environmental issues at hand. Nevertheless, even if consumers are informed, the so-called attitude–behavior gap might prevent sustainable purchasing behavior. This phenomenon refers to the fact that even though people have

[9] Consumption here refers to household consumption. Firms also consume resources, but this aspect is covered under production.

inherently pro-environmental values and attitudes, they do not act on them (Nguyen, Nguyen, & Hoang, 2019; Peattie, 2010). For example, when confronted with a conventional, cheaper, and more expensive organic product in the supermarket, they still might pick the less pricey option although they are aware of the environmental or social harms caused by this product. This phenomenon is evident when comparing surveys that asked people about their willingness to pay for a sustainable product and the actual demand for this product (Vermeir & Verbeke, 2006).

Other barriers to sustainable consumption behavior are that the choices we make as consumers are often habitual and subconscious and thus need some effort to change and also to stick with them (UNEP, 2017). There is also a disconnect between the choices consumers make and the consequences of them, as they are often hard to see. Especially since consumers feel that their individual choices do not make a difference in the overall setting.

4.1.2.2 *Recognizing the Shared Responsibility of Companies and Consumers*

The attitude–behavior gap was also mentioned by Interviewee E, who stresses the responsibility of companies to positively influence consumers: "The challenge for companies is to nudge consumers toward more sustainable consumption behavior and to reduce the possibilities for unsustainable decisions." Of course, companies are only partly to blame (Hadhazy, 2016). The other side of the coin from planned obsolescence is consumers who demand ever new products and who follow the latest fads, who choose convenience over sustainability and are driven by the need to own ever more. Hence companies and consumers share this responsibility in the shift toward sustainable consumption, a fact that was also mentioned by Interviewee C. How companies can create awareness among consumers and influence their behaviors is, therefore, an essential question in developing the ideal types of TSBM for sustainable consumption (see chapter 6).

An example of mass consumption patterns, Box 2 provides an insight into the fast fashion industry.

Box 2 - Insight: The Challenge of (Ultra) Fast Fashion

Between 2000 and 2014, the production of clothing has doubled while per capita clothing consumption has risen by 60% (Remy, Speelmann, & Swartz, 2016). The likes of Zara and H&M now offer up to 24 new collections each year. On average, every German citizen buys around 60 new pieces of clothing each year and a US citizen a new piece of clothing every five days (Greenpeace, 2017; Monroe, 2021). At the same time, the average use time is constantly decreasing; estimations suggest that clothing is disposed of after only wearing it seven or eight times (Remy et al., 2016). Over 92 million tons of textile waste end up in landfills or get burnt each year; this is equal to one garbage truck full of clothes each second (Morlet et al., 2017; Niinimäki et al., 2020).

Clothing is responsible for about 2–10% of the environmental impact from consumption in the EU (Šajn, 2019). Globally, the fashion industry accounts for 8-10% of CO2 emissions and causes further environmental damages (Niinimäki et al., 2020). For example, growing cotton requires large amounts of water, often in regions with water scarcity. A single pair of Levi's 501 jeans requires 3,781 liters of water for production (Levi Strauss & Co., 2015). Cotton production is linked to drying up the Aral Sea, once the world's fourth largest lake, and is also linked to precarious working conditions such as forced labor as well as pollution in the area (Hoskins, 2014). Estimations suggest that the fashion industry causes 20% of industrial water pollution, for example from dyeing, as well as 35% of oceanic microplastic pollution, mostly through cheap synthetic fibers such as polyester (Niinimäki et al., 2020). The social impacts are grave. In 2013, the collapse of the Rana Plaza factory in Dhaka, Bangladesh, brought international attention to the fact that a lot of our clothes are produced under precarious circumstances and violate the basic human rights of vulnerable people.

Although fast fashion companies such as H&M or Inditex engage in a number of initiatives to make their production more sustainable, such as using organic cotton or recycling materials, the core logic of mass consumption remains untouched. On the contrary, a new generation of online-based business models, driven by social media and big data analysis, has emerged: ultra-fast fashion. Market leader AMOS introduces up to 4,500 new pieces to the market per week (Janker, 2021). The companies filter social media for the latest trends and bring them to their stores within just one to two weeks (Wahnbaeck, 2019). They first produce a small number of each piece and only scale up on the styles that are successful. To further reduce the time to market, the companies mostly produce in Europe; however production standards are still questionable. The COVID-19 pandemic uncovered precarious

production conditions and workers being paid well below minimum wage (Janker, 2021). On the upside, this new data-driven, online-only business model significantly reduces inventory and unsold items (Monroe, 2021). Nevertheless, the fact that less resources are wasted in production does not erase the approach of selling cheap, disposable, quickly obsolete clothes that are thrown away after a short time.

4.1.3 The Challenge of Disconnected Production and Consumption

The following section deals with the phenomenon of a disconnect between production and consumption caused by complex GVCs, an unequal distribution of costs and benefits from value creation across the globe but also within countries, and the outsourcing of negative impacts within the value chain. The cocoa industry and supply chain serve as an illustration for this challenge.

4.1.3.1 *The Problem of Global Value Chains*

Multinational companies are "disembedded from the environmental and social context in which they operate" (O'Higgins & Zsolnai, 2018, p. 4). The global production system and value chains lead to functional and geographical fragmentation (Phillips, 2017). Instead of the trade of final products, intermediate products are shipped around the globe in a complex system of outsourcing and offshoring. Different regions specialize in certain steps of the value chain, such as clothing in Bangladesh or pharmaceuticals in India. Those GVCs are also characterized by the further outsourcing of production steps to third parties, increasing the complexity of tracing the origins of products (Seric & Siong Tong, 2019).

Interviewee D pinpoints the problem: "If the final product is put together out of 120 different pieces that come from all around the world, that is a very complex piece to analyze [and it would be difficult to determine the] environmental footprint." It is often difficult for consumers or even companies to trace all the input resources to the source. This lack of transparency favors manufacturing processes that give rise to social and environmental concerns, particularly in the early stages of the supply chain. Interviewee L supports the significance of this

challenge: “people don't see how things are actually truly happening in a supply chain, and even the companies themselves don't know, because there is no way to track it. It's very hard to change, because it's so far removed from our everyday lives.”

The cause and burden of the unsustainable economy over the past decades is distributed unequally across the globe. Only 20% of the population -living in the world’s wealthiest countries- are responsible for 80% of the lifecycle impacts of consumption (Tukker et al., 2008). The material footprint per capita of high-income countries is 13 times higher than the per capita footprint of low-income countries (UN, 2019b). Furthermore, the domestic material consumption is lower than the material footprint of high-income countries, indicating that their consumption relies on imported materials from other parts of the world. It would take 4.4 times Switzerland to cover the ecological resource need of the country (Global Footprint Network, 2021b). Consequently, negative impacts from those activities are outsourced from the Global North to the Global South.

4.1.3.2 *Unequal Global Distribution of Costs and Benefits*

Over 50% of climate change impacts and more than 90% of biodiversity loss happens due to resource extraction and processing (IRP, 2019; One Planet Network, 2021b). The resulting benefits of resource extraction and use are distributed unequally across the world, with the developing countries mostly bearing the environmental costs and the developed world profiting. Transnational corporations profit from weak political and regulatory institutions by capitalizing on the negative externalities left to be paid for by the biosphere and people of those countries (Schneider et al., 2020). Equal access to resources was also identified as an important lever for sustainable and economic development of low-income countries (Wackernagel et al., 2021). Interviewee B exemplifies the power relationship in the concentrated food supply chain that favors only a few players and states: “We need to look at the whole value chain and rethink who benefits the most.” Interviewee J regards this as a challenge as well and demands that “each actor in the value chain receive his/her fair share.”

4.1.3.3 *Outsourcing of Environmental and Social Impact*

While most people are free to choose their profession and can earn a decent income, around 40 million people live in modern slavery, either in forced labor or marriage (Walk Free Foundation, 2018). Cocoa or fish supply chains are especially vulnerable to modern slavery. By consuming such products, we potentially also import modern slavery. Each year, the G20 states are predicted to import USD 354 billion in high-risk products (Walk Free Foundation, 2018).

Switzerland also heavily relies on imports to meet its demands. The equivalent of half the country's size, amounting to double the size of forested area in Switzerland, is needed to meet the demand of only eight agricultural and forest commodities each year. These are cocoa, coconut, coffee, palm oil, pulp and paper, soy, sugarcane, and timber (Jennings, McCormack, & Deveze, 2020). Depending on the origin of those products, environmental and social issues such as deforestation or weak labor standards are included in the package. Twenty-two percent of the Swiss land footprint is situated in such high-risk countries; for coffee, cocoa, soy, and palm oil, this number increases to between 50 and 75% (Jennings et al., 2020). Similar considerations need to be taken for water-intensive products from countries with water scarcity and so on. For a transition toward SPC, it is not enough to adopt sustainable practices in Switzerland; the whole value network and supply chain need to be transformed as well. For consumers, it is challenging to trace this impact of their consumption choices, which adds to a disconnect of production from consumption.

Box 3 - Insight: The Challenge of the Cocoa Supply Chain

Cocoa is mostly grown on smallholder farms predominantly in West African countries such as the Ivory Coast or Ghana, but also in Ecuador or Indonesia (World Cocoa Foundation, 2021). Ghana and the Ivory Coast together produce over two-thirds of the worldwide cocoa supply, but the production conditions are marred by poverty and environmental damage such as deforestation (Becker, 2020). Many farmers live off less than USD 1 per day and almost 1.6 million children work on those plantations, mostly because the farmers are too poor to make a living otherwise (Bhutada, 2020; Sadhu et al., 2020). The majority of the

children work under hazardous conditions, such as carrying heavy loads or being exposed to agrochemicals. Prices are too low to provide a fair and livable income to most of those smallholder farmers, leaving them in a vicious circle of poverty, child labor, and lack of education (Becker, 2020). On the environmental side, deforestation and associated biodiversity loss is a prevailing problem (Waarts et al., 2018). The cocoa beans are then sold to local intermediaries, cooperatives, or international traders (Grabs & Carodenuto, 2021; World Cocoa Foundation, 2021). Due to the vast number of smallholder farmers and the fact that cocoa beans are a relatively homogenous commodity, the cocoa supply chain is characterized by a high level of opacity. Tracing back a bar of chocolate to its origin is almost impossible if the producers have not implemented co-operations with local farmers of some kind. The cocoa chain is a good illustration of how a consumer enjoying a chocolate bar is disconnected from the conditions of its production.

4.1.4 Changes in the Political, Economic, and Social Framework

The way the world works is constantly changing, and the transition toward a sustainable economy also depends on the surrounding frameworks and general economic, social, and political trends. The following section will analyze possible changes in the political, economic, and social system and their potential effect on the transformation toward SPC. The drivers, barriers, and trends in this section were identified from the expert interviews and the literature.

4.1.4.1 *Change in the Political and Economic System*

Developments in the political and economic system mostly arise from regulations or changing legislation.

4.1.4.1.1 Regulations and Legislation

Regulations were mentioned as one of the significant barriers to SPC by the experts. Interviewee D elaborates: “I think more can be done on the regulatory side. Because right now sustainability does not pay in our regulatory sense or not as much as it should.” Interviewee A sees the problem less with governmental regulations but demands: “We need to create financial incentives for a sustainable system to work.” Interviewee D mentions the missing pricing

of externalities as one example of misguided incentives: "Current primary materials do not consider the negative externalities, the pollution caused because there is no standardized way of integrating that into the pricing." Interviewee B agrees and adds that profits for unsustainable activities would be much lower if the true ecological costs were considered. Studies agree with those statements; a majority of essential ecosystem services or benefits from nature do not have a corresponding market value (UNEP, WEF, ELD, & Vivid Economics, 2021).

One of the most recent regulatory examples for SPC are efforts to introduce supply chain responsibility laws, for example, in Switzerland, Germany, or even at an EU level. A study commissioned by the German government in preparation of a supply chain law found that only 12–17% of German companies with more than 500 employees sufficiently report on their supply chain impacts (adelphi, systain, focus right, & EY, 2020). A binding law would require companies to fulfil their due diligence within the supply chain and avoid issues such as human rights violations, pollution, and other negative social and environmental impacts (European Parliament, 2021).

Interviewee B mentions the fear of companies that increased transparency and visibility of unsustainable supply chain activities will reduce profits: "Therefore lobbyists oppose those laws by all means." Indeed, the antagonism against such laws is quite prominent, leading to a rejection of the initiative in Switzerland, and an adjustment of the law in Germany to be less stringent. However, in the long run, and especially with the current initiative at the EU level for new legislation and supply chain responsibility, such laws are a promising approach to turn a regulatory barrier into a regulatory driver for SPC.

4.1.4.2 *Changes in the Social System*

Changes in the social system happen mostly through changes at the consumer level, such as population growth or increased awareness for social issues.

4.1.4.2.1 Population Growth and Growing Middle-class

Population growth in developing countries is a challenge because of its sheer numbers. It is estimated that the overall population will reach 9.8 billion people by 2050 and 11.2 billion by 2100 (United Nations, 2017), with the lion's share of this population explosion will happen in the Global South, especially in Asia and Africa. Basic services like shelter and food need to be provided for them. Hence the challenge in this area will be to lay a basis for sustainable development and to eradicate poverty without exceeding the planetary boundaries (Tukker et al., 2008).

The growing middle class and the transition to a consumption society in developing countries is another considerable challenge for the future (Kharas, 2017). Although high-income countries still account for the most extensive material footprint, a massive growth in material consumption in this millennium has come from upper-middle-income countries, such as Eastern and South-East Asia (IRP, 2019). Consisting of around 3.59 billion people today, the global middle class is expected to grow to 5.3 billion by 2030. These projections imply that five people are added to the planet every second, with the most part coming from Asia (ibid.). Those consumers now demand for products that go beyond the satisfaction of basic needs (Aglionby, 2018). In order to counteract the associated rise in resource consumption due to this development, production and consumption need to leapfrog directly to sustainable solutions (Tukker et al., 2008). This urgency is emphasized by the fact that economic growth alone, i.e., an increase in production and consumption, does not necessarily lead to a higher standard of living or quality of life (Lorek & Spangenberg, 2014).

4.1.4.2.2 Changes in Consumer Behavior

In the Global North, demographic change will be one of the central challenges in the future (World Economic Forum, 2018). The share of the population above 60 years of age will reach one billion by 2020 and is projected to double to two

billion in only 30 years. For example, in Europe in 2015, four working-age people supported one older person, a number that will halve by 2050. This development is critical for social value creation and will mean a great adjustment for companies—from a shrinking workforce to different consumption behavior and a chance for innovation of products and services suited for the elderly. Participation and social justice will be increasingly crucial for sustainable consumption in this area.

Consumers pay more and more attention to the conditions during the production processes of their products, both socially and environmentally (Shao, Taisch, & Mier, 2017). Due to the internet and digitization, it is easier for people to connect even from different ends of the world and to exchange information. Grievances are more challenging to cover up and topics such as burning forests in Brazil or Indonesia are more present and visible, causing a global outcry.

Consumers can make a huge difference by, for example, switching to bicycles for their daily commute to reduce CO_2 (Brand et al., 2021). The impact of changes in commuting habits became apparent during the COVID-19 lockdown, where almost half of the reduction in CO_2 emissions was due to reduced mobility. In general, food, housing, and mobility are the areas in consumption with the highest environmental footprint (WWF, 2021b). Changes in those consumption patterns will have a significant impact on overall production and consumption patterns. For example, a steady increase in plant-based diets over the last years is a huge shift in diets, with the pandemic and connected discussion of our impact on ecosystems further accelerating the trend (Statista, 2020)[10]

Companies need to provide enough information for consumers to guide their purchasing decision and react to their increasingly sustainable preferences by producing more responsibly. Technological innovations such as the blockchain

[10] Numbers for Germany.

facilitate the traceability of materials even across complex supply chains and significantly drive supply chain transparency and traceability (Gaur & Gaiha, 2020).

4.1.4.2.3 Beyond COVID-19

The COVID-19 pandemic fundamentally changed many aspects of our daily lives. Working remotely from the home office became the norm for many with desk jobs, leading to reduced mobility in the daily commute. Mobility in general decreased sharply and instead of a long-distance flight, people frequently vacationed in the vicinity of their homes. On the production side, the vulnerability and our dependence on global supply chains became prominent, causing shortages in a variety of daily and industrial goods. Ninety-four percent of the Fortune 1000 companies faced disruptions to their supply chain due to the pandemic (Accenture, 2021). How the pandemic will affect consumption and production in the long run is still unknown, but some of the changes are probably here to stay.

This section discussed three exemplary challenges of SPC: excessive resource use, mass consumption patterns, and a disconnect between production and consumption. The analysis shows that our excessive use of resources exceeds what our planet can provide in the long run. Among other factors, the linear production system of take-make-waste is responsible for accelerating resource consumption. Creating awareness among consumers to move away from mass consumption patterns and educating them about ethical and sustainable consumption behavior is a crucial challenge for companies. Firms need to recognize a shared responsibility between themselves and consumers to transition to sustainable consumption. The complexity and opacity of GVCs and the outsourcing of negative impact within the supply chain is another challenge that needs to be addressed to transition towards SPC. Lastly, changes in the firm's environment and the related social, political, and economic framework, such as population growth or regulations, influence production and consumption as well.

4.2 Turning Sustainability Challenges into Opportunities for Businesses

This thesis is based on the belief that a redesign of the economic system is necessary, and that the system needs to shift in order to serve people and the planet (Club of Rome & Potsdam Institute for Climate Impact Research, 2020). It is based on the belief, that businesses have the ability and obligation to bring about such a change, or to echo the 2021 International Day for Biological Diversity's motto: "We're part of the solution" (McCormick & Smith, 2021, para. 1). This section aims to show the opportunities that arise out of such a transformation. Adopting an outside-in perspective and following the approach of TSBT is also about an underlying mindset and the motivation to contribute toward a sustainable world. It means to seize the chances instead of fighting the risks. It means ""transforming vicious systemic circles into virtuous circles" (Messerli et al., 2019, p. 892). The presented opportunities were also loosely based on the areas the case study companies operate in (see chapter 6).

From a practical point of view, this chapter aims to show the potential of such opportunities and to inspire companies to take them on. Paul Polman, the former CEO of Unilever, agrees and calls the SDGs "the greatest economic opportunity of a lifetime" (Douma, Scott, & Bulzomi, 2017, p. 20).

4.2.1 A Vision for the Future

The 2020s were declared as a decade of action (UN, 2021b). We are not on track to achieve the SDGs and time is running out to make the necessary changes (UN, 2019a). This urgency is why the Club of Rome declares a *Planetary Emergency* and adopts a planetary emergency plan. They envision that "we can emerge from emergency into a world which benefits all species, within planetary boundaries and leaving no one behind" (Club of Rome & Potsdam Institute for Climate Impact Research, 2020, p. 7). It demands that we at least halve GHG emissions until 2030, protect the global commons, avoid further

biodiversity loss, and preserve human health. For the area of SPC, it suggests moving toward a circular and regenerative economy.

The WBCSD argues for similar transformations but paints a picture of a positive future instead of an emergency. In their Vision 2050, the WBCSD calls for a world where "9 billion people can live well, and within planetary boundaries" by the middle of the century (WBCSD, 2010, p. 5). They describe a pathway for how to achieve this vision, with a special emphasis on the role of businesses. Ten years later, they further specify precisely what this vision looks like. It is divided into a social component of "living well" as well as an environmental component of living "within planetary boundaries" (WBCSD, 2021). What could such a future look like?

4.2.1.1 *Living Well*

The first component of this vision, living well, refers to a world where "everyone's dignity and rights are respected, basic needs are met, and equal opportunities are available for all" (WBCSD, 2021, p. 12). For businesses, this vision implies that potential risks for vulnerable workers, communities, or consumers are considered and avoided when developing or adapting business models. Further emphasis is put on collaborations in multi-stakeholder networks, as well as those with stakeholders such as suppliers or trade unions, to pay attention to the needs of workers across the supply chain. At the same time, in applying this vision, benefits obtained from economic growth are distributed equally and fairly among people. This definition of living well draws upon various concepts and international conventions, such as the SDGs or the Universal Convention of Human Rights, the UN Principles on Business and Human Rights, or Maslow's pyramid of needs.

4.2.1.2 *Within Planetary Boundaries*

Living within planetary boundaries means that "global warming is stabilized at no more than +1.5°C, and natural systems are protected, restored, and used

sustainably. Societies have developed sufficient adaptive capacity to build and maintain resilience in a healthy and regenerative Earth system" (WBCSD, 2021, p. 11). For businesses, this vision means circular or service-oriented solutions for a sustainable use of resources such as food or energy. If implemented, the ecological footprint of production and consumption will be cut in more than half. Food systems will be transformed to be sustainable, and food waste will be minimized. Access to clean water and clean and affordable energy will be provided. Companies would also need to recognize the true value of natural resources and consider this value in their decision-making. The vision of living within the planetary boundaries considers frameworks such as the planetary boundaries by the Stockholm Resilience Centre, the SDGs, the IPCC's Special Report on 1.5°C, or the Convention on Biological Diversity. The questions arise of how we can achieve such a scenario and which opportunities arise for business models addressed to pursue those scenarios.

4.2.2 Sustainability Challenges as Business Opportunities

Undoubtedly, such a transition is not without its challenges and could potentially be costly. Interviewee D agrees: "Rethinking our system to see what it requires for a shift in perspective—that is not always the easiest." A recently published report showed that investment in nature needs to quadruple by 2050 in order to meet our climate, biodiversity, and prevention of land degradation targets (UNEP et al., 2021). Similar studies estimate the cost of implementing the SDGs at USD 4 trillion per year until 2030 (AlphaBeta, 2017). However, business-as-usual is also connected to costs and delayed action only increases them. The degradation of ecosystem services destroys USD 5 trillion each year for the global economy (Kurth et al., 2021). This number could further increase if the situation is not addressed, from 3.1% of global GDP to 18% of global GDP in 2050 (AlphaBeta, 2017). Similar trends would be true for not addressing climate change.

4.2.2.1 *Business Opportunities from Sustainable Development*

Adopting an outside-in perspective means regarding sustainability challenges as opportunities for businesses. In one case study, the founder points out: "The discussion should take a different perspective: there are two billion people who can buy an affordable home. We want to do business around it. So, with two billion people, even if you sell your house at one Franc, you will make two billion. So, it's kind of a massive opportunity indeed."

By 2030, market opportunities of at least USD 12 trillion could be expected each year from a realization of the SDGs (AlphaBeta, 2017; BSDC, 2017). Another study finds a potential direct gain of USD 26 trillion until 2030 through a transition to a low-carbon path as compared to a business-as-usual scenario (Mountford et al., 2018). In the long run, the opportunities cancel out the necessary investments. Earlier in the chapter, I addressed the issue of excluding the pricing of negative externalities. If those externalities, such as pollution, soil degradation, or biodiversity loss were included in business costs, the monetary value of the opportunities would also increase. Moreover, those monetary benefits do not take into account the non-measurable benefits of intact ecosystems, human well-being, or halting climate change.

4.2.2.1.1 Context-dependency and Regional Differences

Business opportunities vary by region and context, with the highest potential for value creation being in the Global South. Over two-thirds of the opportunities and over 90% of the created jobs are expected to arise in the Global South (AlphaBeta, 2017). Possible pathways for transformation to greater sustainability have been proposed for a variety of areas. AlphaBeta (2017) categorizes business opportunities into four systems: food and agriculture; cities; energy and materials; and health and well-being. Other approaches define entry points into the underlying systems to transform them rather than addressing the symptoms, such as human well-being and capabilities, sustainable and just economies, food systems, and nutrition patterns (UN,

2019a). Specifically, for SPC, the One Planet Network focuses on six programs to transform the system: sustainable public procurement; sustainable buildings and programs; sustainable tourism; sustainable food systems; consumer information; and sustainable lifestyles and education.

4.2.2.1.2 Different Foci, Programs, and Entry Points

This short overview illustrates many different perspectives on how to address sustainable development and SPC systemically. Some topics, however, are more important for businesses or yield bigger opportunities for transformation. For example, affordable housing, circular approaches in automotives or appliances, and the reduction of food waste within the value chain are among the most lucrative business opportunities to address the SDGs (AlphaBeta, 2017). At the same time, another study found that sustainable food systems, consumer information, and sustainable lifestyles are especially popular with companies such as Nestle, Ikea, or Microsoft (UN, 2018). The rest of this section describes a selection of those challenges to exemplify how sustainability challenges can be transformed into opportunities.

4.2.2.2 ***Affordable Housing***

Affordable housing is one of the most significant business opportunities in sustainable development (AlphaBeta, 2017). Currently, there are 1.6 million people who live in inadequate housing such as slums or illegal settlements (UN, 2017). This number will rise by 2030, when, it is estimated, the market for housing could yield USD 1,080 billion per year for businesses (AlphaBeta, 2017). Furthermore, affordable housing has the potential to create 70 million jobs: 20 million in China, 14 million in Africa, and another 8 million in India. Affordable housing also leads to significant positive external impacts. Those externalities could occur through health benefits that arise out of housing upgrades.

To provide for affordable and sustainable housing, it would require capital investments of up to USD 1.1 trillion per year until 2030. However, the

replacement of current inadequate housing could lead to construction spending of up to USD 10 trillion. The biggest chances and opportunities are to be found in the Global South, which also needs the most investments. Affordable housing has been categorized as crucial in achieving the SDGs and is also explicitly mentioned as a target in SDG 11 (UN, 2017; UNEP, 2021b).

The topic of affordable housing in the Global South, especially in Africa, will be covered in the case study of the company Oxara in chapter 6.2.2.

4.2.2.3 ***Sustainable Food Systems and Reduction of Food Waste***

The problem of food waste was introduced in Box 1, section 4.1. The analysis showed that food waste causes economic losses and is also a significant waste of resources. Therefore, reducing food waste would free up resources and avoid negative environmental impacts. There are many opportunities that arise from reducing or eradicating food waste and transforming the food value chain to be more sustainable, such as creating plant-based meat, fighting obesity, creating low-income food markets, and many more.

4.2.2.3.1 Reducing Food Waste

The most significant business opportunity in the food sector is in reducing food waste in the GVC (AlphaBeta, 2016, 2017). One study estimated the costs of global food loss at around USD 1.2 trillion (Hegnsholt et al., 2018), and identified five drivers for food loss: 1) a lack of awareness around the topic, 2) inadequate supply chain infrastructure, 3) supply chain policy that does not address the issue, 4) inadequate collaboration efforts along the supply chain, and 5) weak regulations. Each driver identifies business opportunities along the different steps of the supply chain, ranging from production to processing, distribution, and consumption. Creating awareness for the issue with farmers, the design of products and packaging to nudge consumers to waste less, or educate consumers about the issue, yield the highest potential opportunities (see figure 29). Educating producers about more sustainable agriculture is also

part of the business model of the case study companies Veganz and Crowd Container, introduced in chapter 6.



Figure 29: Costs and Opportunities for Reducing Food Loss and Waste, source: Hegnsholt, Unnikrishnan, Pollmann-Larsen, Askelsdottir, & Gerard (2018, fig. 2)

The positive effect of a reduction in food waste is an increase in food availability and a reduction in resource use (see Box 1). Additionally, when pricing in externalities, such as land degradation, in the actual price of the food, the costs associated with food loss and therefore also the potential saving increase by more than 70% (AlphaBeta, 2017).

4.2.2.3.2 Dietary Changes and Plant-Based Meat

Another way to reduce the resource intensity of food production is to make dietary changes. Seventy-seven percent of agricultural land is used for global livestock, which is also responsible for 14.5% of all anthropogenic GHG emissions (FAO, 2021a; UNEP, 2019b). This recognition, together with ethical considerations, has given birth to a trend toward the consumption of vegan products or plant-based meat substitutes. The market size of plant-based meat is currently estimated at USD 14.88 billion and is expected to increase to USD 35.5 billion by 2027 (Statista, 2021). Producers of these substitutes, such as Beyond Meat or Impossible Foods, have a market capitalization of over USD 1 billion and therefore count as so-called "unicorns." Those numbers indicate the considerable potential of plant-based alternatives and vegan products for companies and for reducing resource use and avoiding harm. In fact, this topic will be covered in greater detail in the case study of Veganz in chapter 6.3.2.

4.2.2.3.3 Tackling Under- and Overconsumption

For poor people, it is common to spend as much as 60% of their income on food, and 270 million people still suffer from hunger and malnutrition (BSDC, 2017; Nature Editorial, 2020). Businesses that serve the needs of these people look at business opportunities between USD 155 and USD 265 billion (BSDC, 2017). Despite the prevailing hunger, and at the other end of the spectrum, increasing obesity also puts a significant strain on health care systems. The number of overweight people exceeds the undernourished by almost 2.5 times – almost 2 billion people are overweight (Gladek et al., 2016). The global impact of obesity is estimated at USD 2 trillion, mainly due to healthcare costs, but also due to productivity losses or mitigation investments that aim to address the issue (Dobbs et al., 2014). The fight against obesity can give rise to various business opportunities. Changing the ingredients of products to be nutritious and healthy—product reformulation—potentially yields profits of USD 110–206 billion, and was identified as one of the most critical levers to fight obesity (AlphaBeta, 2016). Another lever would be a healthy diet in general, for example, through a plant-based diet (see above).

4.2.2.4 *Implementing Circular Approaches*

Adopting a circular economy approach could boost resource productivity by 3% in Europe by the year 2030, leading to cost savings of EUR 600 billion per year and generating EUR 1.8 trillion of other economic benefits (Ellen MacArthur Foundation & McKinsey Center for Business and Environment, 2015). Another study identified a market potential of USD 4.5 trillion to be realized by 2030 by adopting circular business models (Lacy, Rutqvist, & Buddemeier, 2015). Whatever the exact numbers, the concept of circularity has resonated with businesses, not least because it offers actual cost savings and earning potential. Next to economic benefits, a circular approach leads to less resource consumption and therefore also yields significant environmental benefits such as halting degradation of ecosystems caused by the extraction of resources.

The circular economy will be further elaborated in chapter 6 when introducing circular business models as one possible ideal type for TSBMs and Oxara as an example for such a circular approach in 6.2.2.

4.3 Discussion: From Challenges to Opportunities

Chapter 4 started by illustrating three challenges of SPC: excessive resource use, mass consumption patterns, and disconnect between production and consumption. Each challenge was illustrated in a specific context: food waste for resource use, fast fashion for consumption, and the cocoa value chain for disconnected production and consumption. Section 4.1 ended by briefly elaborating on the drivers or barriers of SPC.

A core characteristic of TBST is the adoption of an outside-in perspective, which means that a sustainability challenge is taken as a starting point for business decisions. This thesis adopts this perspective and starts the Findings section by elaborating the challenges of SPC, which creates the starting point for the illustration of ideal types of TSBMs later in chapter 6.

Section 4.2 shows how these challenges can be turned into opportunities for businesses. The section starts by mapping a vision of a sustainable future to which businesses should contribute. This vision describes a world where people live well within the planetary boundaries. After establishing a common vision and aim for where SPC should lead us, some areas are analyzed for business opportunities. They range from creating affordable housing to managing sustainable food systems, reducing food waste, and implementing circular solutions. The list is not exhaustive. The opportunities addressed above aim to illustrate that pursuing sustainable development and contributing toward solving sustainability challenges can also lead to economic gains.

Seeing sustainability challenges as an opportunity also means rethinking the current business model completely and diverging from how things have been done in the past. It could mean looking within the company's scope and competencies if there are any sustainable alternatives for harmful activities.

Achieving the SDGs or sustainable development in general will require more investments and new business models. To better understand how businesses can harvest those opportunities, some examples of TSBMs will be introduced in chapter 6.

5 The Truly Sustainable Business Model

This chapter introduces TSBMs as a tool for companies to effectively address sustainability challenges. Section 5.1 starts by briefly comparing TSBMs with SBMs by illustrating the different questions they are concerned with and the perspectives the different business models employ. Section 5.2 then presents the characteristics that constitute a TSBM and will be the main part of this chapter. Section 5.3 provides a summary of the six identified characteristics and shortly connects them to the elements of a business model: value proposition, value creation and delivery, and value capture and recovery. An additional element that is special to a TSBM are the sustainability challenges that are addressed by the business model.

5.1 How a Truly Sustainable Business Model is Different from a Sustainable One

This section aims to illustrate the main differences between an SBM and a TSBM. Chapter 2.2 showed the changed view that is needed across three different dimensions: the company's perspective on sustainability, the company's purpose and value creation, and the underlying definition of business success. Those dimensions correspond to the elements of the business model: the perspective on sustainability and company purpose correspond to the company's value proposition, value creation corresponds to the company's value creation and delivery, and value capture and recovery correspond to the redefinition of business success.

"A truly sustainable business reflects on questions that go beyond those so far considered" (Dyllick & Muff, 2016, p. 165). Based on the identified characteristics from the previous sections, a TSBM changes the perspective from inside-out to outside-in and therefore also needs to frame the questions it is concerned with differently to an SBM (see 2.3.3). How a TSBM is different from an SBM can best be illustrated through those various questions it asks and the perspectives it takes on. An illustration of such a change in perspective is given

by recalling the questions for the business model elements from chapter 2.3.3 and comparing them to the questions asked in the context of a TSBM.

Issue	Inside-out Perspective of SBM	Outside-in Perspective of TSBM
A new view on the company perspective and company purpose	-	*See business as an integral part of the natural and social environment.* **Integrating Sustainability Challenges:** Which sustainability challenges are most pressing within the company's industry and scope? Which sustainability challenges can most effectively be addressed through the company's competencies and resources?
	Focus on how the company can improve its sustainability performance. **Value Proposition:** What kind of value should be provided to whom?	*Adopt an outside-in perspective and regard sustainability challenges as a starting point for business decisions.* **Value Proposition:** How are sustainability challenges integrated into the purpose of the business model? What are the vision and mission? How does it reflect in the business model? Which value should the company create at the individual, organizational, and societal level to solve sustainability challenges?
A new view on value creation	*Focus on reduction of negative value creation.* **Value Creation and Delivery:** How is value created and delivered?	*Focus on positive value creation for the common good.* **Value Creation and Delivery:** How is positive value enhanced or created through the business model?
A new view on business success	*Profit is prioritized over social and environmental value creation—profit main measure for success.* **Value Capture and Recovery:** How does the company make money, and how is economic, social, and environmental value captured and recovered by the company and its stakeholders?	*Business success measured by a business' contribution to sustainability challenges by creating positive value for the planet and society.* **Value Capture and Recovery:** How does the business model contribute to effectively addressing a sustainability challenge? Which value is realized and/or recovered for the company, its stakeholders, the environment, and society?

Table 4: From SBMs to TSBMs, source: own depiction

5.1.1.1 *Integrating Sustainability Challenges*

Adopting an outside-in perspective requires rethinking the elements of the business model. A TSBM is different from an SBM in its explicit integration of the sustainability challenges it aims to address. Therefore, in my definition of a TSBM, the addressed sustainability challenges explicitly need to be part of the business model (see table 4).

Understanding sustainability challenges or sustainability goals such as the SDGs in the context and scope of the company is key to integrating them into the core of the business. Dyllick and Muff (2017) suggest that companies need to "define the relevant issues for them, depending on their exposure to issues and competencies to solve them" (Dyllick & Muff, 2017, p. 18). Hence, a TSBM needs to consider two aspects in the sustainability challenges it addresses: 1) which challenges are most relevant within its scope and 2) which challenges can be most effectively solved through its competencies and resources.

Tools like the gap frame could help identify relevant challenges within the company's context (Muff et al., 2017). When integrating sustainability challenges in the TSBM, a company first has to ask:

> *Which sustainability challenges are most pressing within the company's industry and scope?*

Second, a company cannot address all sustainability challenges at once; instead, it needs to prioritize which goals to address through its business model (Scott & McGill, 2018). Therefore, it has to ask:

> *Which sustainability challenges can most effectively be addressed through the company's competencies and resources?*

5.1.1.2 *Changing the Perspective: The Value Proposition*

The value proposition in an SBM is concerned with the question *What kind of value should be provided to whom?* However, the underlying perspective of the SBM is still on how it can improve its sustainability performance. The analysis

in chapter 2.2 showed that a new view on sustainability is needed to close the disconnect between corporate sustainability management and the state of our planet. An outside-in perspective means that sustainability challenges are the starting point for a TSBM.

Such a change in perspective influences the value proposition of the business model. Traditionally, the value proposition "describes the issue or challenge that a company solves for the customer and the products and services required to deliver the proposition" (Bradley, Parry, & O'Regan, 2020, p. 69). For a TSBM, the challenge that needs to be solved for society and/or the planet needs to be integrated into the business model as well and solving sustainability challenges is the main purpose of a TSBM. These sustainability challenges need to be integrated into the business model through the company purpose, which is part of the value proposition. Later on, all business model elements are aligned to the purpose and hence to societal value contribution and to solving sustainability challenges. Therefore, a TSBM first asks questions like:

> *How are sustainability challenges integrated into the purpose of the business model? What are the vision and mission? How does it reflect in the business model?*

when designing the value proposition.

After integrating the sustainability challenge through the company purpose, the next step is to design the value offered through the company's products and services. Traditionally, the value proposition describes how specific customers receive value from the product and service offerings of the firm. In the context of TBST, this focus needs to shift from customer to public value (Dyllick & Rost, 2017). The products and services need to be explicitly designed to contribute to sustainable development by providing positive environmental, social, and economic value for the common good to various stakeholders. An example of such a change in perspective is instead of focusing on selling food products, a company could aim to provide healthy nutrition.

Which value should the company create at the individual, organizational and societal level to solve sustainability challenges?

5.1.1.3 *A New Approach to Value Creation*

The element of value creation and delivery in an SBM is concerned with the question *How is value created and delivered?* However, an SBM focuses on minimizing environmental impacts, for example, through more resource-efficient production methods, energy savings, or waste reduction. In short, especially in the environmental domain, an SBM is concerned with being less unsustainable. This perspective changes in a TSBM: instead of reducing the negative, a TSBM aims to increase the positive, which also entails regenerating resources instead of compensating for negative impacts. From a social perspective, a TSBM aims to create value for the whole value network, including the environment and society. Therefore, a TSBM is concerned with the question:

How is positive value enhanced or created through the business model?

5.1.1.4 *A New Definition of Company Success: Value Capture and Recovery*

Finally, the value capture and recovery in an SBM answers the question: *How does the company make money, and how is value captured and recovered by the company and its stakeholders?* This question reflects the prioritization of financial value creation in an SBM, even though it also aims to create social and environmental value next to profit. However, revenue is still the primary measure of success for an SBM. In a TSBM, profit is seen as the means to solving sustainability challenges instead of an end in itself. The company aims to be successful in the long run and to be financially sustainable and stable. Sustainability is the starting point for evaluating business opportunities, as long as the opportunities are economically viable. The ultimate goal and purpose of a TSBM is to contribute toward solving sustainability challenges. Consequently, its success should be judged by its ability to make such a contribution. A TSBM asks:

How does the business model contribute to effectively addressing a sustainability challenge?

Furthermore, a TSBM aims to capture the value it creates for itself, as well as a wide set of stakeholders within its value network, including the environment and society. Additionally, it aims to recover value, be it in the form of products or resources or other kinds of value that previously have not been captured. The value capture and recovery of a TSBM hence also ask:

Which value is realized and/or recovered for the company, its stakeholders, the environment, and society?

Figure 30 summarizes the questions. Together with the characteristics of a TSBM, which will be introduced in the next section, they build a powerful tool to analyze and develop a TSBM.

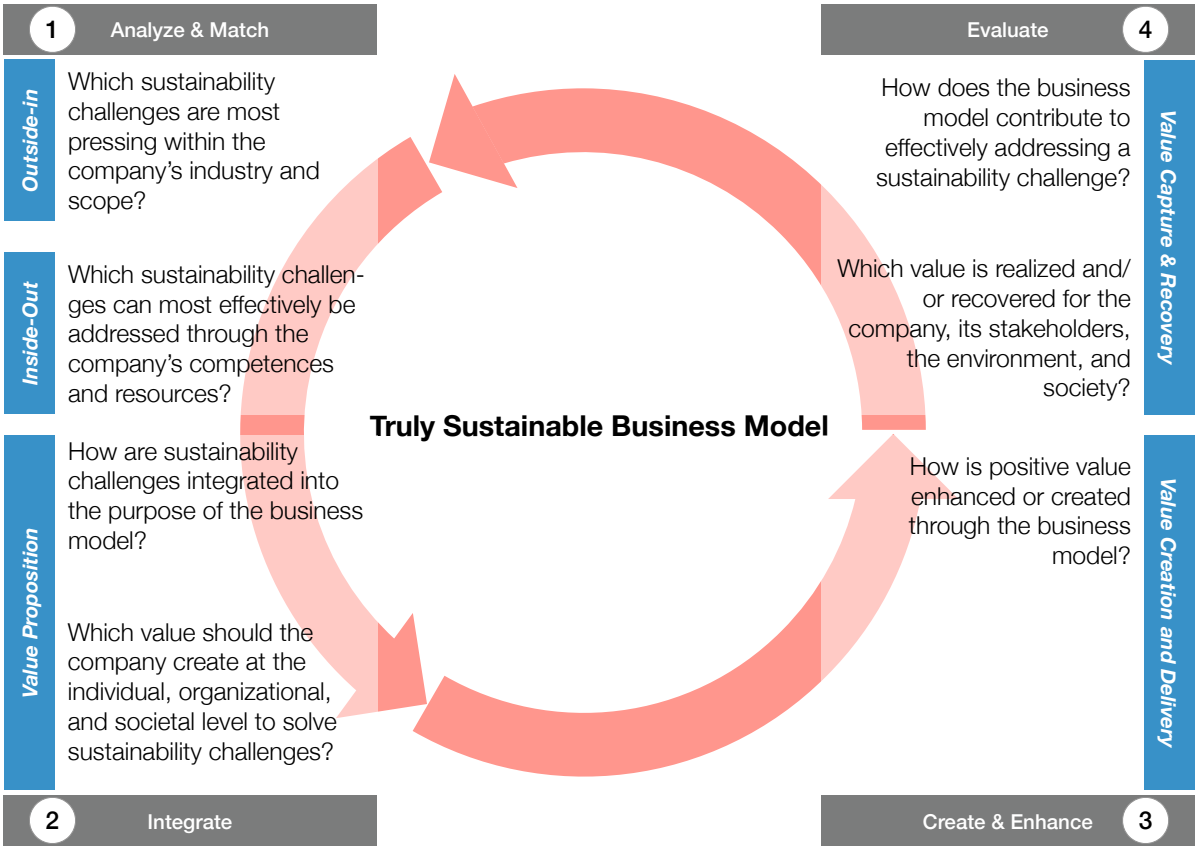


Figure 30: Questions for analyzing a TSBM, source: own depiction

5.2 Characteristics of a Truly Sustainable Business Model

This chapter paints a comprehensive picture of a TSBM by describing its constituent characteristics. Those characteristics were identified through an integrative literature review and were enriched and verified by experts. The development of the characteristics was guided by two questions: *Does such a characteristic contribute toward solving a sustainability challenge* and *Does it increase the positive instead of reducing the negative?* Those questions are another threshold to ensure that all the characteristics match the requirements and values of TBST.

Overall, a TSBM has six characteristics: *collaborative*, *conserving*, *contributive*, *outside-in*, *purpose-driven*, and *transformative*. Each of those characteristics consists of different sub-categories. For example, being *collaborative* entails the aspects of *a wide range of stakeholders is considered*, *the whole network is sustainable*, *emphasis on collaboration*, and *sustainability efforts are communicated to stakeholders*.

Each of the characteristics will be described in detail in this chapter. The relevance of the characteristics for the elements of the business model that were introduced in 5.1 forms part of the discussion in chapter 5.3.

5.2.1 Collaborative

Collaboration with and integration of a variety of stakeholders has been identified as a key feature and the foundation of an SBM (Freudenreich, Lüdeke-Freund, & Schaltegger, 2020; Pedersen, Lüdeke-Freund, Henriques, & Seitanidi, 2020), both by researchers as well as the experts, pointing to a high relevance for TSBMs too.

Being collaborative consists of four different aspects: a wide range of stakeholders is considered, ensuring the whole value network is sustainable, emphasis on collaboration, and sustainability efforts are communicated to stakeholders (see figure 31).

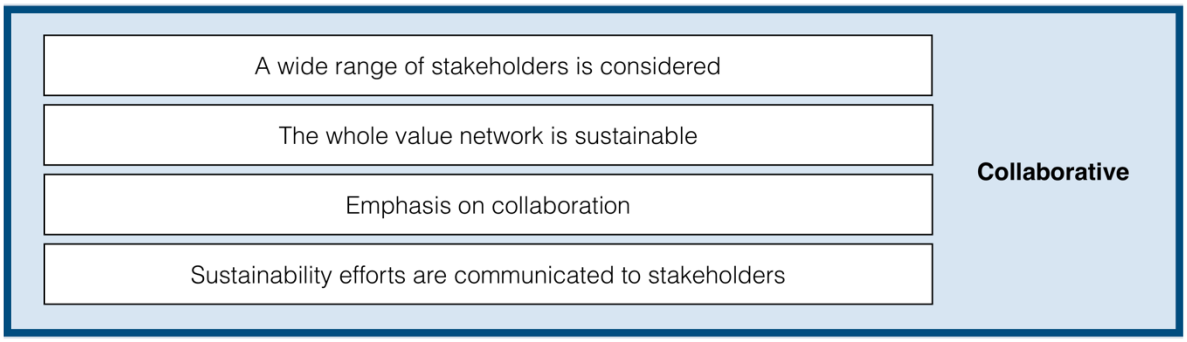


Figure 31: The four aspects of *collaborative*, source: own depiction

5.2.1.1 *A Wide Range of Stakeholders is Considered*

A TSBM considers the impact of the business on a wide range of stakeholders. In doing so, several aspects need to be addressed. First, society and the environment need to be considered as stakeholders of the business model. Second, the interests of all stakeholders need to be considered and aligned. Third, stakeholders need to be engaged and collaborated with. Lastly, costs and benefits that arise from the business model should be shared fairly among all stakeholders.

5.2.1.1.1 Society and Environment as Stakeholders of the Business Model

The topic of how to consider the interests and perspectives of a wide range of stakeholders was popular in the identified literature. Compared to the traditional understanding of business models as considering shareholders to be the only relevant stakeholders of the business, TSBMs acknowledge that society and the environment, as well as future generations, have a stake in the company (Bocken et al., 2014; O'Higgins & Zsolnai, 2018b; Stubbs & Cocklin, 2008). This shift extends the understanding of stakeholders to include marginalized groups without a voice (Aagaard, 2019). Stakeholders hold a reciprocal relationship with the company, as they receive value from and proceed to create further value from the business model activities. This relationship needs to also reflect in the value proposition of the company that is directed at multiple stakeholders (see 5.1.1.2; also: Stål, 2018). Interviewee J stresses the importance of including

a variety of stakeholders: "It's important to take the various interest groups into account, not just the shareholders or the owners or the customers."

For TSBMs, this novel understanding of stakeholders includes actors without a voice, especially the environment, society, and future generations:

> *A TSBM considers marginalized groups or actors without a voice, especially the environment, society, and future generations, to have a stake in its operations.*

5.2.1.1.2 Consideration and Alignment of Different Interests

The previous section extended the understanding of stakeholders to wider groups, such as society and the environment. By recognizing that those actors have a stake in the company, the impacts of the company on those actors and their role in the value creation of the business model are also acknowledged.

A TSBM must consider and align the interests of a wide set of actors in its business decisions (Boons & Lüdeke-Freund, 2013; Dyllick & Muff, 2017; Evans et al., 2017; Freudenreich et al., 2020; Joyce & Paquin, 2016; Kennedy & Bocken, 2019; Lozano, 2018; Stubbs & Cocklin, 2008; Upward & Jones, 2016; Yunus, Moingeon, & Lehmann-Ortega, 2010). But first, businesses need to understand stakeholder needs, which can be done by identifying them and then building mutually respectful relationships and engaging in a discourse with the stakeholders (Freudenreich et al., 2020; O'Higgins & Zsolnai, 2018a). The stakeholders' interests have to be integrated into corporate decision making, even if they have no voice of their own (Aagaard, 2019; Boons & Lüdeke-Freund, 2013; Joyce & Paquin, 2016; Lüdeke-Freund et al., 2016).

"It is about defining how to treat which stakeholder," adds Interviewee G. Responsible stakeholder management also needs to account for the fact that creating value for one stakeholder might destroy value for another or neglect its interests, and it must balance all these different needs (Bocken, Short, Rana, & Evans, 2013; Lüdeke-Freund et al., 2016). "Many actors in many places with many different interests need to be considered," adds Interviewee K.

The business model now aims to not only maximize company profits for the benefits of its customers but also increase the welfare of its wider stakeholders (Morioka, Bolis, Evans, et al., 2018; Stubbs & Cocklin, 2008; Yunus et al., 2010). This perspective means that the value proposition of the business model also incorporates value creation for this wider set of stakeholders, or this value even drives the decision making within a TSBM (Kennedy & Bocken, 2019; Lüdeke-Freund, Carroux, et al., 2018; Spieth, Schneider, Clauß, & Eichenberg, 2019).

From the above discussion, we draw that a TSBM needs to reflect the consideration and integration of various stakeholder needs:

> *The interests of a wide set of stakeholders are balanced and integrated into the TSBM.*

5.2.1.1.3 Stakeholder Engagement and Collaboration

Active engagement and collaboration with stakeholders has been identified as another important facet of a TSBM (Bocken, 2021; O'Higgins & Zsolnai, 2018a; Stål, 2018; Stubbs & Cocklin, 2008; Young & Reeves, 2020). Through cooperation with stakeholders, the business model extends its reach beyond the traditional boundaries of the company and creates social, environmental, and economic value (O'Higgins & Zsolnai, 2018a; Stubbs & Cocklin, 2008).

This collaboration can be aimed at mutual learnings, acquiring certain skills that are needed to solve a sustainability challenge, or simply to increase the impact in tackling an issue (Bocken, 2021; O'Higgins & Zsolnai, 2018a; Yunus & Weber, 2010). Interviewee G also stresses the importance of collaboration and mutual support, and Interviewee K suggests democratic participation of all stakeholders as a mode to actively engage them.

What this stress on collaboration and engagement means for a TSBM is:

> *A TSBM actively engages with its stakeholders.*

5.2.1.1.4 Fair Distributions of Benefits and Costs Among Stakeholders

The analysis also uncovered the importance of fairly distributing the benefits and costs of value creation amongst the stakeholders (Bocken et al., 2014; Boons & Lüdeke-Freund, 2013; Freudenreich et al., 2020; Laasch, 2017; Morioka, Bolis, & Carvalho, 2018; Morioka, Bolis, Evans, et al., 2018). A fair distribution of benefits means that the value that is created, is also captured by the stakeholders it is aimed for (Bocken et al., 2014; Laasch, 2017). This consideration also includes indirect stakeholders who interact with one of the company's stakeholders and profits indirectly through this relationship by capturing this cascaded value (Morioka, Bolis, Evans, et al., 2018).

One way to directly share costs and benefits with stakeholders is to integrate them into the business model; for example, employees could be co-owners of the company and ownership could be democratized (Gallo, Antolin-Lopez, & Montiel, 2018; Moratis & Melissen, 2020). A fair distribution of costs entails accounting for the environmental and social impacts of the business activities (Boons & Lüdeke-Freund, 2013). This aspect cannot be overcome by outsourcing the negative impacts along the value chain as has traditionally been done (see 4.1.3.3 and 5.2.1.2.3 for more detail). Interviewee J stresses this point as well: "You really have to grant the actors their fair share of the value creation."

A TSBM facilitates such an equal distribution of costs and benefits among stakeholders in the value network:

> *In a TSBM, the costs and benefits of value creation are fairly distributed among the parties involved.*

To sum up, considering a wide range of stakeholders in a TSBM means:

> *A TSBM considers marginalized groups or actors without a voice, especially the environment, society, and future generations, to have a stake in its operations. The interests of those wide set of stakeholders are balanced and integrated into the TSBM. Lastly, a TSBM actively engages with its stakeholders and distributes costs and benefits of value creation fairly among the parties involved.*

5.2.1.2 *The Whole Network is Sustainable*

For a company to exist in a sustainable network, several aspects need to be fulfilled. First, the business model needs to be embedded in a network of sustainable partners. Second, this network should have a shared purpose. Third, no negative impacts can be outsourced in the value network, and last, principles of ethical and sustainable sourcing must be employed.

5.2.1.2.1 Business Model Embedded in Network of Sustainable Partners

A business model does not exist in isolation; it entails a complex network of partners and is embedded in the wider economic and social system it is part of (see 5.2.4). The importance of a TSBM to exist within a wider sustainable value network emerged as a strong point from the analysis of the literature (Pedersen, Lüdeke-Freund, Henriques, & Seitanidi, 2020; Spieth, Schneider, Clauß, & Eichenberg, 2019; Stubbs, 2017; Stubbs & Cocklin, 2008; Upward & Jones, 2016; Elkington et al., 2016). Or, as Wells (2013, p. 74) puts it: "The business cannot […] be just a green island of sustainability in a sea of rampant materialism, environmental malpractice, and social inequity." This finding was also supported in the interviews. Interviewee C agrees that no business model can exist in isolation. Interviewee I further elaborates that a business model is only sustainable if it "considers all SDGs across the whole value chain," a point that is also supported by Interviewee A. Therefore, the focus needs to shift from regarding companies as single entities toward the creation of truly sustainable value networks.

Based on these findings, a TSBM must recognize the fact that it cannot be truly sustainable in isolation:

> *A business model can only be truly sustainable if the wider value network around it is truly sustainable as well.*

5.2.1.2.2 Shared Purpose within Value Network

Such an outcome can only be achieved in collaboration with partners because a "strong shift in the business logic of all organizations is required to systematically link economic, environmental, and social opportunities to create an alignment of purpose" (Pedersen et al., 2020, p. 7). Consequently, another important factor for the conceptualization of TSBMs that emerged from the analysis of the literature was the importance of a shared and aligned purpose of contributing to sustainability challenges among the partners within the value network (Evans et al., 2017; Freudenreich, Lüdeke-Freund, & Schaltegger, 2019; Schneider & Clauß, 2019; Stubbs & Cocklin, 2008; Yunus, Moingeon, & Lehmann-Ortega, 2010).

Interviewee C identifies interactions of sustainable with non-sustainable business models as a potential source of frictions. Collaborating with partners that share the same purpose could ease those frictions. For example, Spieth, Schneider, Clauß, and Eichenberg (2019, p. 438) find that "a shared understanding of values and beliefs has been shown to be a powerful way to harmonize multiple stakeholders." Interviewee K agrees: "I need a common understanding with my stakeholders to start the journey."

Such an alignment of purpose has two sides. On the one hand, partners are selected based on their existing values and purpose (Schneider & Clauß, 2019; Spieth et al., 2019), a selection process that precludes certain partners or even industries. Such a selection of like-minded partners also extends to involving investors that share the same goal (Spieth et al., 2019; Stubbs & Cocklin, 2008; Yunus et al., 2010). Such investors are more "patient" with regard to profitability requirements (Lüdeke-Freund et al., 2016). Interviewee B adds: "To succeed in a transformation, companies need to consciously decide to build the value chain from actors with the same goal." However, he adds that serious commitment is more important than being perfect right away to qualify as a partner. A company can also collaborate with partners to develop and

transform them to be more sustainable. This aspect will be covered in more detail in section 5.2.1.3.

I adopt this understanding of a shared purpose for the TSBM value network:

> *The wider value network of TSBM consists of partners that share the same purpose and values of TBST.*

5.2.1.2.3 No Outsourcing of Negative Impacts in Value Network

Outsourcing the negative impact in the value chain was another point the analysis of both the literature and the interviews revealed as being a concern (Boons & Lüdeke-Freund, 2013; Lüdeke- Freund, Massa, Bocken, Brent, & Musango, 2016). This point connects to section 5.2.1.1.4 that called for a shared distribution of costs and benefits in the supply chain. It is not enough for the company itself to be sustainable. Interviewee A explains this with the example of palm oil and the relating monocultures: "We outsource those activities to other countries and now point the finger that they are not allowed to cut down the rainforest. But we do not understand the underlying dynamic."

Suppliers, customers, and stakeholders of the company are a part of the business model, and they need to be sustainable too. If a company cleans up all its production but buys products that have been produced under unsustainable circumstances—for example, through child labor or polluting activities—it cannot qualify as truly sustainable. Interviewee A relates to environmental aspects by stating that "the ecological footprint across the whole value chain is a huge topic." Interviewee K further supports this and points out the implications of this approach for the business model: "I have a look [at the various points of the supply chain] and make them as transparent as possible. Then I take full responsibility at all those points." He suggests one way to transparency is to reduce actors along the supply chain, a point that will be covered in Chapter 6 as well. Interviewee F also touches on the topic of responsibility and asks: "Where are the boundaries of the impact of an SBM?"

Avoiding the outsourcing of negative impacts for downstream activities falls under the same topic. One example of such activities is the oil industry, where companies might be able to clean up their own operations, but the most significant impact of their products is caused during the use-phase with their customers (Lüdeke-Freund et al., 2016). Companies need to consider the start as well as the end of their value chain (Lüdeke-Freund et al., 2016; Nosratabadi et al., 2019). Interviewee D even suggests that the customer should not have to think about the impact and sustainability of the product because the product is developed with full sustainability in mind. The responsibility for the product and its negative impacts during the use phase and end of life are not left solely with customers.

A TSBM not only has a value chain but a wider value network. Therefore:

> *A TSBM does not outsource negative value creation and impacts in the value network.*

5.2.1.2.4 Principles of Ethical and Sustainable Sourcing

Research revealed the importance of ethical and sustainable sourcing as a key characteristic of SBMs (Boons & Lüdeke-Freund, 2013; Morioka et al., 2018; Nosratabadi et al., 2019; Wells, 2016). Interviewee A states: "It is good to outsource value creation, but we need to take care that the standards that are valid at home are also considered there." Ethical and sustainable sourcing also leads to reduced supply chain risk (Wells, 2016) and includes non-financial transactions, such as the establishment of trust or exchange of knowledge (see 5.2.1.3.1). Furthermore, ethical sourcing requires suppliers to be fairly reimbursed for their products and services without taking unfair advantage of market power (Spieth et al., 2019). This approach means that the requested product quality and sustainability requirements are given more weight than the lowest possible price.

A TSBM subscribes to the principles of ethical and sustainable sourcing:

> *The value network of a TSBM is based on ethical and sustainable sourcing.*

The TSBM is part of a wider value network. Romeo et al. (2021, l. 2) call such a network based on a shared purpose a "mission-based ecosystem," defined as "bring[ing] together diverse players bound by a shared mission to solve a complex problem, by co-creating a solution that cannot be created as effectively in silos." To sum up:

> *A business model can only be truly sustainable if the wider value network around it is truly sustainable as well. This network consists of partners that share the same purpose and values of TBST. A TSBM does not outsource negative value creation and impacts in the value network, which is based on ethical and sustainable sourcing.*

5.2.1.3 ***Emphasis on Collaboration***

The emphasis of a TSBM is on collaborative relationships with a variety of partners. Those relationships are built on trust and are mutually beneficial. Within those relationships, value is co-created, even with competitors. The TSBM actively manages those partners and builds a community around a shared purpose.

5.2.1.3.1 Trustful and Mutually Beneficial Relationships

Solving grand sustainability challenges requires novel, close collaboration of actors such as companies, NGOs, and governmental agencies. Or, as interviewee F puts it: "The sustainable business model requires a much stronger form of collaboration." Engaging and building deeper relationships with stakeholders as well as collaborations with industry peers, other civil actors, or the government have been identified as top priorities for businesses in the future (BSR & Globescan, 2019).

The relationship between the company and its stakeholders is mutually beneficial and goes beyond financial transactions, building on long-term trust, fairness, and on dialogs at eye-level. The importance of establishing those relationships has been stressed by various authors (Freudenreich et al., 2020;

Joyce & Paquin, 2016; Morioka, Bolis, Evans, et al., 2018; O'Higgins & Zsolnai, 2018a; Stubbs, 2017; Stubbs & Cocklin, 2008). Those kinds of relationships build on the network of like-minded partners in which the TSBM exists (see 5.2.1.2.2). Having a shared purpose facilitates relationships that go beyond financial transactions and self-interest (Freudenreich et al., 2020; Morioka, Bolis, Evans, et al., 2018). Deeper relationships also facilitate building awareness for environmental and social issues amongst the partners and sharing knowledge and enhancing the whole network to be more sustainable (Morioka, Bolis, Evans, et al., 2018). Interviewee G stresses the importance of how the company collaborates with its stakeholders.

A TSBM needs to proactively and voluntarily engage with a variety of partners to increase its impact and effectively address sustainability challenges (Dyllick & Muff, 2016, 2017). For such an endeavor, new partners with an exponential mindset are needed, meaning they aim for a radical transformation instead of incremental change (Elkington et al., 2016).

> *The relationship of a TSBM and its stakeholders is mutually beneficial and built on trust.*

5.2.1.3.2 Co-Creation

The co-creation of environmental, social, and economic value has been identified as another cornerstone of a TSBM (Bocken et al., 2014; Boons & Lüdeke-Freund, 2013; Freudenreich et al., 2019; Jonker & Faber, 2019; Lüdeke-Freund et al., 2016; Schneider & Clauß, 2019; Stubbs & Cocklin, 2008). Co-creation means that the company and the stakeholders are both creators and recipients of value that is created within their network, a concept also defined as "multi-value creation" (Freudenreich et al., 2020; Jonker & Faber, 2019; Lüdeke-Freund et al., 2016). Consequently, the value created is created for the whole system rather than for a single entity.

Co-creation must involve all actors in the network, such as shareholders, scientists, NGOs, or even governments (Freudenreich et al., 2020; Stål, 2018;

Upward & Jones, 2016; Young & Reeves, 2020). One example of such close co-creation is industrial symbiosis, where companies in close proximity coordinate their resource use, and the output of one business model becomes the input for another (Boons, Spekkink, & Mouzakitis, 2011; Stubbs & Cocklin, 2008). A common approach to co-creation involves consumers in the co-creation of products and services.

The business model describes the rationale of creating value as an "approach to building and maintaining relationships" (Freudenreich et al., 2019, p. 14; see also Bocken et al., 2014). Interviewee J also stresses the importance of collaboratively tackling sustainability challenges. Such value co-creation with partners "enables firms that want to develop 'true' BST to create joint interpretation mechanisms and attach shared meaning to the interface of business and society" (Moratis & Melissen, 2020, p. 12). Consequently, all stakeholders need to be integrated into the business activities and transformed toward TBST. For the conceptualization of a TSBM, this means:

> *A TSBM co-creates environmental, social, and economic value together with its stakeholders in and for the value network it operates in.*

5.2.1.3.3 Coopetition

A special form of value co-creation is collaboration with competitors, also called coopetition. If competencies or resources that are required to tackle an essential sustainability challenge are not found within the company, these can also be acquired through collaboration with other partners, for example, NGOs, but also through coopetition with rival companies (Morioka, Bolis, & Carvalho, 2018; Morioka, Bolis, Evans, et al., 2018; Stubbs & Cocklin, 2008; Young & Reeves, 2020). Interviewee D says: "I think the problem of the status quo is the attitude of 'this is my product and I'm going to keep the secrets and all the technology to myself so that I get ahead in the market.' And that type of mentality is one that really hinders collaboration." Interviewee J agrees with the importance of also engaging with the competition and mentions economies of

scale as one of the motivations to engage. Since challenges cannot be solved alone, engaging with competitors is crucial.

Such coopetitive approaches have a high potential to transform value systems and are especially suited to address sustainability challenges since the sustainability of a company is connected to the sustainability of the wider value network (see 5.2.1.2; Morioka, Bolis, Evans, et al., 2018). Coopetition can also help to break down barriers that hinder a sustainable transformation (Young & Reeves, 2020). Joint efforts to raise industry standards on sustainability are just one example of overcoming such barriers. Another strong case is made for the context of social businesses, where shared learning, sharing best practices, and overcoming sustainability challenges have a higher priority than protecting things like intellectual property or competitive advantages (O'Higgins & Zsolnai, 2018a; Yunus & Weber, 2010).

A TSBM also cooperates with competitors to contribute toward sustainable development.

> *A TSBM actively integrates its competitors to break down barriers and transform sectors and industries toward TBST.*

5.2.1.3.4 Active Management of Partners

Interviewee K asserts: "As a company, I understand myself as a societal actor. I aim to engage and create awareness with other industry partners, customers, or civil society to transform the system." The understanding that a (T)SBM helps companies actively engage with partners and leads them toward sustainability is a topic discussed in the literature (Evans et al., 2017; Lüdeke-Freund et al., 2016; Schneider & Clauß, 2019; Spieth et al., 2019; Stål, 2018; Stubbs, 2017). One lever to increase the impact of a business model is to create multipliers and to enable other companies to also contribute towards sustainable development (Lüdeke-Freund et al., 2016; Schneider & Clauß, 2019; Spieth et al., 2019). Interviewee B wonders about creating a space for actors to engage and establish connections with like-minded partners. He suggests specialized platforms as

one solution. Interviewee K contemplates the sharing of solutions: “How do I develop a solution that is not only accessible to me, but which I can share with my whole network?”

A TSBM also needs to actively shape its value chain and enable others to be more sustainable:

> *A TSBM helps and supports partners in their sustainability transformation to increase the overall impact of the value network.*

5.2.1.3.5 Community Building

Actively building a community around the company and regarding it as part of the business model is another crucial aspect of collaboration (Moratis & Melissen, 2020; Schneider & Clauß, 2019; Spieth et al., 2019). Actively developing communities could mean enabling citizen-led sustainability initiatives or connecting people to enable them to address sustainability challenges (Moratis & Melissen, 2020; Schneider & Clauß, 2019; Spieth et al., 2019). For example, Patagonia supports grassroots organizations that fight for land conservation or other environmental initiatives (Chouinard, 2006). Those people outside the narrow value network could become multipliers or ambassadors for shared ideas and purpose and enable mutual support (Schneider & Clauß, 2019). Community building amongst the company’s partners, such as consumers or investors, through close dialog, is also a common approach for TSBMs (Spieth et al., 2019). Interviewee B mentions crowdsourcing as a way to profit from such a community: “And that's not an anonymous crowd, but actually one's own community, one's own target group. And that's where I can build strong organizations, even though the framework conditions are not yet that far along.”

Community building is also a priority for TSBM.

> *A TSBM actively builds and engages communities around a shared purpose.*

Summing up this section on the emphasis of collaboration within a TSBM:

> *The relationship of a TSBM and its stakeholders is mutually beneficial and built on trust. A TSBM co-creates environmental, social, and economic value together with its stakeholders in and for the value network it operates in. It actively integrates its competitors to break down barriers and transform sectors and industries toward TBST. A TSBM helps and supports partners in their sustainability transformation to increase the overall impact of the value network and actively builds and engages communities around a shared purpose.*

5.2.1.4 ***Sustainability Efforts are Communicated to Stakeholders***

Finally, being open about the company's sustainability journey is the last piece of being *collaborative,* and its importance for business models has been identified by a variety of authors (Dyllick & Muff, 2016; Elkington, Lim, & Smith, 2016; Lüdeke- Freund et al., 2016; O'Higgins & Zsolnai, 2018a; Schneider & Clauß, 2019; Spieth et al., 2019; Stubbs & Cocklin, 2008; Young & Reeves, 2020). A company should be open and transparent about its sustainability strategy and, most importantly, the impact it has on society and the environment (Dyllick & Muff, 2016). The reporting is also based on the materiality of the issues at hand and is done in an integrated way across economic, social, and environmental dimensions (Dyllick & Muff, 2016; Elkington et al., 2016; O'Higgins & Zsolnai, 2018a). The existence of integrated reporting does not qualify for sustainability per se; done in the right way, it is a reflection of a mindset for sustainability (Stubbs & Cocklin, 2008). Therefore, an open, transparent, integrated reporting on material issues in full depth is necessary for a TSBM. Interviewee J agrees: "We need transparency within the company, but also against the outside." Additionally, the accounting measures need to reflect non-financial social and environmental measures and need to be adapted from the traditional firm-wide reporting to the business model level (Lüdeke-Freund et al., 2016).

Transparency measures can, for example, also include the ability to trace the products and data flows across the whole system (Elkington et al., 2016; Spieth

et al., 2019). Interviewee A states: "This transparency will arise because there is a different transparency simply due to the Internet."

Being open about one's own impact also signals credibility to the stakeholders (Schneider & Clauß, 2019), a notion that is supported by the case study on the company Veganz. Interviewee K agrees: "Sustainable companies set themselves goals, which are verifiable from the outside. They have clear time frames and clearly defined goals and manage to create the structures internally to ensure that the goals are achieved. Those goals are communicated even if they are not achieved. And these are goals that go far beyond the company's own horizon." Either way, Interviewee B agrees and stresses the importance of addressing those failures: "A transparent communication shows what I do differently."

A TSBM adopts such an open and transparent communication too:

> *The impacts of a TSBM are transparently and proactively communicated to the stakeholders.*

An overview of the topics discussed for the characteristic of *collaborative* is provided in table 5.

Sub-themes of *Collaborative*	**Description**
A wide range of stakeholders is considered	A TSBM also considers marginalized groups or actors without a voice, especially the environment, society, and future generations, to have a stake in its operations. The interests of those wide set of stakeholders are balanced and integrated into the TSBM. A TSBM actively engages with its stakeholders and distributes benefits and costs of value creation fairly amongst the parties involved.
The whole value network is sustainable	A business model can only be truly sustainable if the wider value network around it is truly sustainable as well. This network consists of partners that share the same purpose and values of TBST. A TSBM does not outsource negative value creation and impacts in the value network, which is based on ethical and sustainable sourcing.
Emphasis on collaboration	The relationship of a TSBM and its stakeholders is mutually beneficial and built on trust. A TSBM co-creates environmental, social, and economic value together with its stakeholders in and for the value network it operates in. It actively integrates its competitors to break down barriers and transform sectors and industries towards TBST. A TSBM helps and supports partners in

	their sustainability transformation to increase the overall impact of the value network, for example, and actively builds and engages communities around a shared purpose.
Sustainability efforts are communicated to stakeholders	The impacts of a TSBM are transparently and proactively communicated to the stakeholders.

Table 5: Overview of the characteristic *collaborative*, source: own depiction

5.2.2 Conserving

Most of the measures we employ for our use of resources focus on reducing the negative impact of extracting those resources and on efficiency in the extraction process. Given that the analysis in chapter 2 and 4 showed that earth's systems are still degenerating instead of regenerating, there is a need to refocus these measures on actively conserving resources and moving away from resource efficiency. A TSBM should be built on the same lines.

The characteristic of conserving consists of two different aspects: recognizing planetary and societal boundaries, and regeneration from harmful activities (see figure 32).

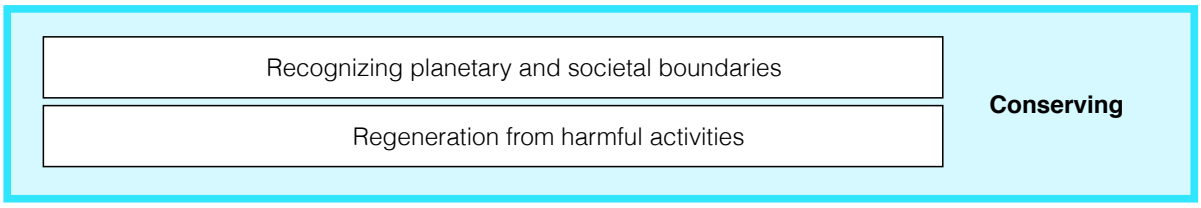


Figure 32: The two aspects of *conserving*, source: own depiction

5.2.2.1 *Recognizing Planetary and Societal Boundaries*

The concept of planetary and societal boundaries is an inherently systemic and macro-level concept (Leach et al., 2013; Raworth, 2012, 2018; Rockström, Steffen, Noone, Persson, Chapin III, et al., 2009; Steffen et al., 2015). Many researchers emphasize the importance of those concepts for the business model perspective as well (Baue & Thurm, 2018; Clinton & Whisnant, 2014; Elkington et al., 2016; Jonker & Faber, 2019; Kennedy & Bocken, 2019; Laasch, 2017; Loetscher & Kreis, 2018; Lüdeke-Freund et al., 2016; Stål, 2018; Upward & Jones, 2016; Wells, 2016).

Humankind currently consumes the equivalent of what 1.7 planets can produce and absorb within a year (Global Footprint Network, 2021a). This fact is illustrated by the planetary boundaries approach as introduced by Rockström, Steffen, Noone, Persson, Chapin, et al. (2009) and Steffen et al. (2015). By also integrating measures for social justice, Leach et al. (2013) and Raworth (2012, 2018) further expand the concept to create a "safe and just operating space for humanity." Interviewee A says: "It is important to not only have environmental topics on the radar but also to think how we can ensure a societal foundation for the future." A company needs to recognize the environmental ceiling and social foundations, and assess the impact of its business model against the total limitations of the planetary and social boundaries (Baue & Thurm, 2018; Kennedy & Bocken, 2019). Interviewee D asks: "What should be allowed to grow within the limits of the planetary boundaries?".

Admittedly, considering a company's individual contribution toward overall resource use is complex. Interviewee D acknowledges: "I think the point about the planetary boundaries is really essential because that is the one that we do not quite know how to deal with as it's so political. Getting them down to a business level would be wonderful." But a recognition of the planetary boundaries as an absolute limit means more than calculating a company's individual footprint and determining what it means in terms of a percentage of a budget for planetary and social boundaries. Interviewee D specifies: "Companies should not assume that resources are abundant and endless." A TSBM needs to reflect an understanding of the business model being embedded within a wider economic, social, and planetary system and relate value creation to significant local, regional, and global limits (Lüdeke- Freund et al., 2016; Stål, 2018; see also 5.2.4.2). Through positive value creation (see also 5.2.3.2), the business model should automatically regenerate rather than deplete the planetary boundaries or be "less unsustainable" (Stål, 2018; Upward & Jones, 2016). Interviewee D refers to our yearly budget of resources and suggests: "There should be a global governance system for resources."

Companies such as H&M or Ikea explore opportunities to integrate the planetary boundaries concept into their business decisions (Stockholm Resilience Centre, 2019). Through a collaboration with the Ellen MacArthur Foundation, H&M seeks to explore opportunities for the textile industry within the planetary boundaries (Stockholm Resilience Centre, 2017). Approaches for regenerative businesses often include circularity. For example, a product stewardship approach ensures products are designed to last in order to reduce the need for new products, or the lifetime is extended through repair, reuse, and recycling of the materials (Joyce & Paquin, 2016; Wells, 2013, 2016).

A TSBM adopts the planetary and social boundaries as a guiding principle:

> *A TSBM recognizes and integrates the planetary as well as societal boundaries, i.e., the absolute limits of the ecosystems and the absolute thresholds of a just society.*

5.2.2.2 *Regeneration from Harmful Activities*

Compensation of negative impacts, such as carbon offsetting through certificates or planting trees, is a popular measure to make a business model more sustainable (Kennedy & Bocken, 2019; Stubbs & Cocklin, 2008). However, compensation is not enough to address the root causes of problems such as climate change. Additionally, those compensation schemes and the claims of "climate neutrality" are often misused for greenwashing (Bialek, 2021).

While some of the approaches identified in the literature speak of the compensation of harmful activities, compensation reflects a mindset of reducing the negative instead of increasing the positive, similarly to efficiency-focused measures in the section before. A slow shift in thinking is emerging that instead of compensation, business models need to create regeneration after the negative impacts that were already caused (Baue & Thurm, 2018; Jonker & Faber, 2019; Stål, 2018; Upward & Jones, 2016). Interviewee K stresses the importance of regenerative thinking: "Everything that I do should serve the purpose of maintaining some kind of ideal status. If I take something out of the system, I

have to replace it in an appropriate way." Interviewee L agrees: "Part of this mentality is that you see your company […] as part of the collective. It's not just yourself, you are using the resources from the environment, you're hiring people from your neighborhoods and you really see that whatever you produce is to give back to the resources that you took, right? So, seeing this cycle or this connection to the environment and by environment I don't mean just a physical environment but also the social environment as well."

A TSBM reflects such a regenerative mindset:

> *A TSBM must move from compensating harmful activities to avoiding them or to regenerating from the damages.*

An overview of the topics discussed for the characteristic of *conserving* is provided in table 6.

Sub-themes of *Conserving*	**Description**
Recognizing planetary and societal boundaries	A TSBM recognizes and integrates the planetary as well as the societal boundaries, i.e., the absolute limits of the ecosystems and the absolute thresholds of a just society.
Regeneration from harmful activities	A TSBM must move from compensating harmful activities to avoiding them or to regenerating from the damages.

Table 6: Overview of the characteristic *conserving*, source: own depiction

5.2.3 Contributive

The characteristic of being *contributive* consists of two distinct aspects: first, business is built to endure and second, a business creates positive environmental, social, and economic value for the common good (see figure 33).

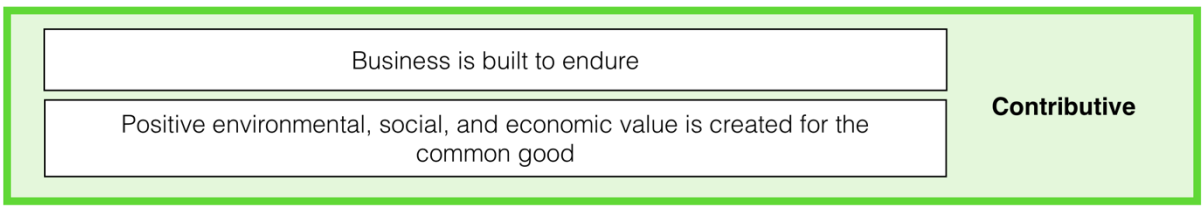


Figure 33: The two aspects of *contributive*, source: own depiction

5.2.3.1 *Business is Built to Endure*

A business cannot survive and solve sustainability challenges without being financially viable (Bradley et al., 2020; Dyllick & Muff, 2016; Freudenreich et al., 2020; Laasch, 2017; Morioka, Bolis, Evans, et al., 2018; O'Higgins & Zsolnai, 2018b; Randles & Laasch, 2016; Stubbs & Cocklin, 2008; Wells, 2016). In order to solve sustainability challenges through ongoing business activities, a business model needs to create a steady income for itself (Dyllick & Muff, 2016; Laasch, 2017; Morioka, Bolis, Evans, et al., 2018; Stubbs & Cocklin, 2008; Wells, 2016). If it does not survive economically, it cannot create value, or, put differently: "An uncompetitive business model is not sustainable" (Wells, 2013, p. 3; Spieth et al., 2019). Interviewee G agrees: "For me, economic sustainability is also important. That is, the company is set up for the long term and serves a corporate purpose. I think it is also great when companies or organizations are funded by donations and thus do sustainable things. But I prefer Purpose with Profit Enterprises."

Sustainability issues require planning over a short, medium, and, most importantly, long- term horizon. However, instead of aiming for short-term value maximization or a quick "exit" through an IPO, a TSBM needs to aim for long-term financial stability and resilience, and a long-term horizon in business planning (Joyce & Paquin, 2016; Lozano, 2018; Morioka, Bolis, Evans, et al., 2018; Nosratabadi et al., 2019; O'Higgins & Zsolnai, 2018a; Stubbs, 2017; Stubbs & Cocklin, 2008; Upward & Jones, 2016; Wells, 2013; Young & Reeves, 2020). This long-term horizon is needed to incorporate the needs of future stakeholders into business planning and to slow business development accordingly (Aagaard, 2019; Stubbs, 2017). Interviewees I and D agree with the importance of taking a long-term perspective. Interviewee K adds: "I need a shared understanding with my stakeholders that we are jointly moving toward a broader business model, a model where we focus more on the long term."

The average lifetime of an SP500 company fell from 67 years in the 1920s to just 15 in 2012 (Wells, 2016). This development illustrates the dynamics of the

current system and showcases the problem of short-terminism. An enduring TSBM creates long-term employment, products and services, and stable societal and environmental value contributions, thereby providing social stability (Wells, 2016). Long-term profitability was also stressed by Interviewee A.

A TSBM needs to incorporate this patient understanding and thinking in time horizons that match the needs of sustainability:

> *A TSBM is built to endure and adapts a long-term horizon in business planning. It is economically viable and financially sustainable, resilient, and stable in the long run.*

5.2.3.2 ***Positive Environmental, Social, and Economic Value is Created for the Common Good***

In order to create environmental, social, and economic value for the common good, a TSBM needs to shift the focus away from reducing the negative and toward increasing the positive, focusing on creating societal value.

5.2.3.2.1 From Reducing Negative to Positive Value Creation

Another aspect of SBMs in the literature is their goal of reducing or minimizing mostly environmental but also social impacts (Aagaard, 2019; Bradley et al., 2020; Lüdeke-Freund, Carroux, et al., 2018; Stubbs & Cocklin, 2008), a view supported by Interviewee J. For example, resource use in SBMs is based on resource efficiency, lean production, reduction of waste and pollution, or energy efficiency (Elkington et al., 2016; O'Higgins & Zsolnai, 2018a; Spieth et al., 2019; Stål, 2018; Stubbs, 2017; Stubbs & Cocklin, 2008; Wells, 2013). This resource efficiency is achieved by applying tools such as a lifecycle assessment to track the impacts of the products and services throughout their lifespan, including distribution, use, and end of life (Joyce & Paquin, 2016). Interviewee F supports the importance of considering resource efficiency in SBMs, which results in a minimized social impact and environmental or ecological footprint (Stubbs & Cocklin, 2008).

However, focusing solely on resource efficiency or reduction of negative impacts does not fit the concept of a TSBM. Instead of focusing on trade-off thinking between the three dimensions of value creation, environmental, social, and economic, or making a business model less unsustainable, a TSBM needs to focus on positive value creation and how it can contribute towards solving a sustainability challenge (Dyllick & Muff, 2016).

For example, a TSBM cannot create value through any unsustainable activities (Laasch, 2017)—an oil company might reduce its direct emissions but the core business is still unsustainable and therefore does not match a TSBM. "Business activities may not destroy nature, violate the interests of future generations or pose negative impacts on society" (O'Higgins & Zsolnai, 2018b, p. 12). The goal of a TSBM is to create positive value, such as revitalization, regeneration, or restoration of the environment and positive societal contributions (Baue & Thurm, 2018; Clinton & Whisnant, 2014; Jonker & Faber, 2019).

An example of such a change in perspective at the business level is the future-fit business benchmark (Future-Fit Foundation, 2020). Break-even goals define a minimal threshold for sustainable development, while positive pursuits actually create a positive impact.

A TSBM is one that reflects the thinking of positive pursuits:

> *A TSBM does not create value based on unsustainable activities and focuses on increasing positive impacts instead of focusing on being less unsustainable.*

5.2.3.2.2 Creating Value for the Common Good

The creation of value for the common good across social, environmental, and economic dimensions, created for and by stakeholders and not just a group of people such as shareholders, is a prominent theme in the SBM literature (Aagaard, 2019; Bradley et al., 2020; Dyllick & Muff, 2016; Freudenreich et al., 2020; Laasch, 2017; Lozano, 2018; Morioka, Bolis, Evans, et al., 2018; O'Higgins & Zsolnai, 2018b).

A TSBM does not only create financial value but has an "integrated" (O'Higgins & Zsolnai, 2018b) or "blended" (Laasch, 2017) understanding of environmental, social, and economic value creation (Bocken et al., 2014; Boons & Lüdeke-Freund, 2013; Lozano, 2018). Interviewee K agrees: "The requirement for many SBMs is the social and environmental value-add." Freudenreich et al. (2019, p. 9) speak of a "portfolio or a blend of different forms of value, rather than a single outcome;" others speak of "multi-value creation" (Jonker & Faber, 2019, p. 159). A TSBM aims to balance value creation in the three dimensions, which means creating sufficient economic value for itself and its stakeholders while enhancing the quality of human life and preserving and regenerating the environment (Bocken et al., 2014; Jonker & Faber, 2019; O'Higgins & Zsolnai, 2018b; Upward & Jones, 2016). Interviewee D agrees: "You should not only think about economic, but also social and ecological value."

Interviewee B makes the point that "companies have always created societal benefits." He mentions Aldi and Lidl as an example, which started out by addressing the problem of high food prices and limited access to affordable options. He wonders how such established approaches can be combined with new ones to create "new narratives."

Equally, this value should not only be created for the benefit of the company and the business model but for and in the wider value network (Aagaard, 2019; Freudenreich et al., 2020; Jonker & Faber, 2019; Laasch, 2017; Spieth et al., 2019; Young & Reeves, 2020). Interviewee D adds: "Every decision should consider the impact for the stakeholders, for the environment, and for society." A truly sustainable company acknowledges that a wide range of stakeholders contributes to the business model's value creation in many different forms (Freudenreich et al., 2020). Conversely, value is also created for and captured by a wide variety of stakeholders, extending even to the environment and society. This view is in opposition to the traditional paradigm of value creation directed solely at customers and capturing value for shareholders (Aagaard, 2019; Stubbs & Cocklin, 2008). Different kinds of value are created for different kinds of

stakeholders through fair and equitable collaborative relationships (Freudenreich et al., 2020; Kennedy & Bocken, 2019).

A TSBM aims to maximize societal value, for example, by offering "socially relevant products and services" (Wells, 2013, p. 38; see also Bradley et al., 2020). Such a product or service should not only serve an existing market need but create value for multiple stakeholder groups and thus contribute towards solving a societal challenge (Kennedy & Bocken, 2019; Laasch, 2017; Wells, 2013). Value which is created for the common good directly links to solving a sustainability challenge and establishes a TSBM as a connection of businesses to sustainable development (Dyllick & Muff, 2016; Freudenreich et al., 2020; Lüdeke-Freund, Carroux, et al., 2018; Morioka, Bolis, Evans, et al., 2018; Young & Reeves, 2020). The TSBM, therefore, becomes an instrument to evaluate a firm's contribution towards sustainable development (Freudenreich et al., 2020).

The TSBM reflects an integrated understanding of sustainability:

> *A TSBM creates positive environmental, social, and economic value for itself, its stakeholders, the environment, and society.*

Summing up section 5.2.3.2:

> *A TSBM does not create value based on unsustainable activities and focuses on increasing positive impacts instead of focusing on being less unsustainable. A TSBM creates positive environmental, social, and economic value for itself, its stakeholders, the environment, and society.*

An overview of the topics discussed for the characteristic of *contributive* is provided in table 7.

Sub-themes of *Contributive*	Description
Business is built to endure	A TSBM is built to endure and adapts a long-term horizon in business planning. It is economically viable and financially sustainable, resilient, and stable in the long run.
Positive environmental, social, and economic value is created for the common good	A TSBM does not create value based on unsustainable activities and focuses on increasing positive impacts instead of focusing on being less unsustainable. A TSBM creates positive environmental, social, and economic value for itself, its stakeholders, the environment, and society.

Table 7: Overview of the characteristic *contributive*, source: own depiction

5.2.4 Outside-in

What is the most definitive sign of a truly sustainable business? Dyllick & Muff (2017) state that "only a shift in organizational perspective, from inside-out to outside-in, will allow a company to develop the strategies and the business models needed to make relevant contributions to overcome societal and planetary challenges, thereby contributing to the common good. This last shift is what we consider to be the sign of true BST" (p. 20). But what exactly does *outside-in* mean as a characteristic of a business model?

The characteristic of *outside-in* consists of three aspects: sustainability as the starting point for business; recognizing the interconnectedness of business, society, and environment; and business impacts on the environment and society are considered (see figure 34).

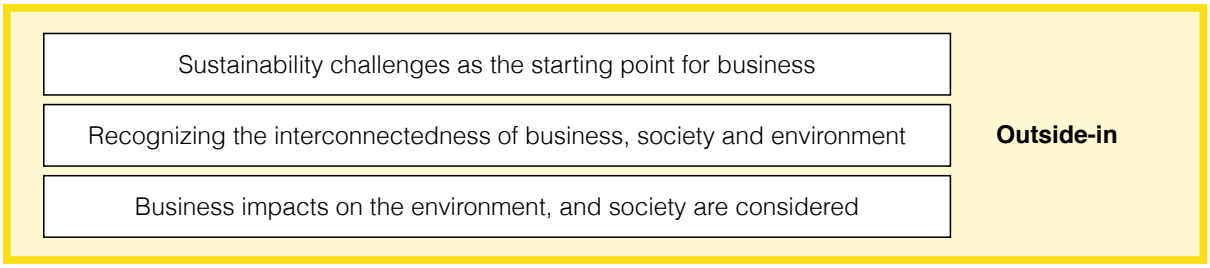


Figure 34: The three aspects of *outside-in*, source: own depiction

5.2.4.1 *Sustainability Challenges as the Starting Point for Business*

In order to take sustainability as a starting point, a TSBM needs to translate sustainability challenges into business opportunities and develop context-specific solutions to address them.

5.2.4.1.1 Translating Sustainability Challenges into Business Opportunities

Translating sustainability challenges into business decisions and actions is one of the most important aspects of a TSBM and has been propagated by various authors as a priority (Baue & Thurm, 2018; Dyllick & Muff, 2016; Lüdeke-Freund et al., 2016; Morioka et al., 2018; Stål, 2018). Adopting such an *outside-in perspective* means that "the organization starts out by reviewing pressing sustainability challenges that society faces, and then engages in developing new strategies and business models that overcome these" (Dyllick & Muff, 2016, p. 166). For Interviewee I, the adoption of the outside-in perspective is what defines a TSBM: "[it] is defined by the fact that it takes this outside-in perspective and is adopted to solve these challenges." Interviewees B and C agree that companies need to reflect on "Where do we have a major challenge?" Interviewee G states: "So actually, for me SBMs are very often characterized by the fact that, if they are successful, they eventually make themselves obsolete."

Rather than focusing on curing symptoms, such an outside-in approach aims to address root causes of sustainability challenges (Baue & Thurm, 2018; Bocken et al., 2014; Morioka, Bolis, Evans, et al., 2018). Interviewee K reflects that companies have to ask themselves: "Is that a real problem that I'm solving, or is it a problem that I'm actually creating?"

For example, a business opportunity might arise from addressing an environmental or social challenge that is complemented with economic solutions to create market opportunities (Lüdeke-Freund et al., 2016; Morioka, Bolis, Evans, et al., 2018; Stål, 2018). Those opportunities are addressed through the company's core competencies and distinct resources, capabilities, and possibilities (Dyllick & Muff, 2016; Moratis & Melissen, 2020; Young & Reeves,

2020). Interviewee B adds: "In which area do I have competencies, or can I contribute with my competence to the solution of these challenges?" Interviewee C stresses the need to solve the problems economically in order to create wealth for the common good.

This approach stands in contrast to the predominant logic of *inside-out*, where the company is the starting point for corporate sustainability considerations and measures. Interviewee C specifies: "The main thing is to solve the world's problems, and that means a completely different business model is needed." Interviewee K adds: "Outside-in is about taking something other than the company as a starting point; it is about the motivation to act."

The adoption of the outside-in perspective is one of the major constituents of a TSBM. The experts added valuable points to the discussion: the business model should be directed at solving a significant "real" challenge; it should not create more problems with its activities; if it is successful, it becomes ultimately obsolete; and it must regard the outside-in perspective as a motivation to act.

> *A TSBM is motivated by an outside-in perspective and starts out with a relevant sustainability challenge and translates it into a business opportunity. Instead of curing symptoms, the TSBM addresses the root causes.*

5.2.4.1.2 Context-Tailored Approaches

The impact of addressing sustainability challenges varies depending on the specific company and its capabilities, across and even within industries, different societal or geographical and cultural contexts, or even at different points in time (Boons & Lüdeke-Freund, 2013; Dyllick & Muff, 2016; Laasch, 2017; Lüdeke-Freund et al., 2016; Wells, 2013). Interviewee K agrees: "I think the translation into the business model can be very, very different in individual cases."

This context-dependence is a crucial point and also influences the approach to patterns and types of business models (see Chapter 6). By acknowledging the differences and the specificity of each challenge and environment, a TSBM

pattern that is universally applicable is not possible anymore. Interviewee K reflects: “But perhaps many companies need something like heuristics for how they arrive at design parameters?” Hence a different approach is needed to capture this context-dependence and will be introduced as an ideal type in chapter 6. A best-practice or high performer approach has been suggested by Aagaard (2019).

For TSBMs, this means that all actions and relationships within the business model are tailored to the specific setting it exists in. A TSBM identifies the material issues for the company according to their relevance for the company and their capabilities to solve them (Dyllick & Muff, 2016):

> *A TSBM offers tailored solutions to specific sustainability challenges and considers specific local, sectoral, or societal contexts and differences.*

To sum up:

> *A TSBM is motivated by an outside-in perspective and starts out with a relevant sustainability challenge and translates it into a business opportunity. Instead of curing symptoms, the TSBM addresses the root causes. A TSBM offers tailored solutions to specific sustainability challenges and considers specific local, sectoral, or societal contexts and differences.*

5.2.4.2 *Recognizes the Interconnectedness of Business, Society, and Environment*

The mindset that a business does not exist in isolation or only within a specific industry but that it exists as part of a wider social and environmental system has been recognized as being an essential characteristic of an SBM (Bocken et al., 2014; Laasch, 2017). Likewise, a TSBM is based on adopting a systemic perspective and relies on thinking in terms of systems rather than in terms of the individual firm (Baue & Thurm, 2018; Elkington et al., 2016; Lozano, 2018). Such a complex system consists of a multitude of societal actors and their respective relationships to each other (Morioka, Bolis, Evans, et al., 2018). Adopting this broad perspective extends the analysis of business models to consider the whole system (Evans et al., 2017). Interviewee J agrees: “So, even

with goodwill, you can't be successful when you're naive when you don't see all the impact because you only focus on one thing and do not look at the whole picture."

When taking a systemic perspective, a TSBM needs to consider the systemic interactions between the multiple players and entities; businesses positively or negatively influence society and environment, and vice versa (Baue & Thurm, 2018; Bradley et al., 2020; Elkington et al., 2016; Evans et al., 2017; Lüdeke-Freund, Bohnsack, et al., 2019; Schneider & Clauß, 2019; Spieth et al., 2019). Interviewee E refines: "I think the most important criterion is that, above all, you take a systemic perspective, that is, you do not just think in terms of your own corporate cosmos but try to go beyond that and sort out the mechanisms of the business model."

Those interactions are recognized and balanced through a "business–society dialog" (Boons & Lüdeke-Freund, 2013, p. 13). Interviewee J sees such a system as one of harmony: "The state, civil society, science, and global and local companies are in harmony. That there is a world where all have equal rights, where all can live.

In the scenario of TBST, the business model actively aims to change the system (see also 5.2.6), a transformation that requires a "new social contract between business and society in which sustainability is a non-negotiable item" (Moratis & Melissen, 2020).

> *A TSBM recognizes the interconnectedness of a company with its environment and engages in a business–society dialog to actively increase the sustainability of the system.*

5.2.4.3 ***Business impacts on the environment and society are considered***

A TSBM considers its impacts on the environment and society by measuring them and through the internalization of externalities.

5.2.4.3.1 Measuring Impacts

Measuring the impact of business on the environment and society was a reoccurring theme in both the literature analysis as well as with the experts (Dyllick & Muff, 2016; Elkington et al., 2016; Jonker & Faber, 2019; Joyce & Paquin, 2016; Lüdeke-Freund et al., 2016; Nosratabadi et al., 2019; O'Higgins & Zsolnai, 2018b; Randles & Laasch, 2016; Stubbs, 2017; Upward & Jones, 2016). Interviewee K reminds us that you can only manage what you can measure.

Whereas a traditional business model considers financial impacts such as costs or revenues, a TSBM considers its impact (positive or negative) on the environment and society (Joyce & Paquin, 2016; Randles & Laasch, 2016). Such measures include social and environmental dimensions, for example, lifecycle assessments of emissions, ecosystem impacts, or effects on human health (Joyce & Paquin, 2016; Nosratabadi et al., 2019). This integrated reporting considers non-monetary measures, expressed in appropriate qualitative or quantitative units (Jonker & Faber, 2019; Stubbs, 2017; Upward & Jones, 2016). Examples of non-monetary measures are employee happiness, customer loyalty, avoidance of pollution, but also nature's intrinsic value apart from its resource value (Stubbs, 2017).

However, while frameworks like triple bottom line accounting exist for the firm level, approaches tailored to the business model are still missing (Lüdeke-Freund et al., 2016). Keeping in mind the network perspective of the business model, impact assessments need to include the value network and "every level of business activity" (Elkington et al., 2016, p. 25; see also Stubbs, 2017). Interviewee E agrees: "I think that a consistent framework is still very much lacking, a framework that really helps you to see if these pillars make up my business model, and I therefore also have to measure them and see whether they really achieve success." Interviewee D supports this statement and underlines the complexity of accounting for the various sustainability impacts.

Measuring the impact on the environment and society also means identifying the areas with the biggest impacts and addressing those with priority (Joyce &

Paquin, 2016). In doing so, businesses can progress towards broader goals such as the SDGs, the planetary boundaries, or other ambitious aims (Elkington et al., 2016). Those impacts need to also include externalities, a point that is further elaborated in the next section. Interviewee F agrees: "There is a need for a clear anchoring of environmental targets." The importance of communicating those measures to the stakeholders was already touched upon in section 5.2.1.4.

A TSBM should integrate suitable qualitative and quantitative, monetary, and non-monetary measures into its impact evaluation:

> *The impacts of the TSBM, including its value network, on the environment and society are measured and considered in business decisions.*

5.2.4.3.2 Internalization of Externalities

A TSBM aims to internalize negative social and environmental externalities resulting from its business activities (Boons & Lüdeke-Freund, 2013; Dyllick & Rost, 2017; Elkington et al., 2016; Evans et al., 2017; Lüdeke-Freund et al., 2016; Stubbs, 2017). However, Interviewee D points out: "There is not a standardized way of integrating that into the pricing."

The internalization of negative environmental and social externalities is one of the demands in the planetary emergency declaration (Club of Rome & Potsdam Institute for Climate Impact Research, 2020). Interviewee J agrees on the significance of externalities: "In one opinion, the capitalist system or the free market system also fails with these extreme costs that are not internalized." Interviewee B adds: "As long as the market externalizes ecological and social costs […] it will not work that we create social, societal added value in mainstream organizations, at least beyond greenwashing and social washing measures."

One way to internalize negative externalities is a product-service-systems approach. This approach transfers complete ownership of the product to the company, which means that all the lifecycle impacts are reflected in the pricing of the product (Evans et al., 2017). Another way is to implement a democratic

ownership structure, as research found that companies with a democratic ownership structure were less likely to externalize the costs from their business activities (Hankammer, Kleer, Mühl, & Euler, 2021). Interviewee K stresses the importance of considering the stakeholders in this process: "I need a basic understanding with my stakeholders that we are moving toward a broader business model, where we internalize social and environmental costs."

For a business model to be truly sustainable, its operations and prices must reflect environmental and social benefits and costs:

> *A TSBM internalizes negative externalities that arise from its business activities and adjusts its pricing to reflect those costs.*

To sum up:

> *The impacts of the TSBM, including its value network, on the environment and society are measured and considered in business decisions. A TSBM internalizes negative externalities that arise from its business activities and adjusts its pricing to reflect those costs.*

An overview of the topics discussed for the characteristic of *outside-in* is provided in table 8.

Sub-themes of *Outside-in*	**Description**
Sustainability as the starting point for business	A TSBM is motivated by an outside-in perspective and starts out with a relevant sustainability challenge and translates it into a business opportunity. Instead of curing symptoms, the TSBM addresses the root causes. A TSBM offers tailored solutions to specific sustainability challenges and considers specific local, sectoral, or societal contexts and differences.
Recognizes the interconnectedness of business, society, and environment	A TSBM recognizes the interconnectedness of a company with its environment and engages in a business–society dialog to actively increase the sustainability of the system.
Business impacts on the environment and society are considered	The impacts of the TSBM, including its value network, on the environment and society are measured and considered in business decisions. A TSBM internalizes negative externalities that arise from its business activities and adjusts its pricing to reflect those costs.

Table 8: Overview of the characteristic *outside-in*, source: own depiction

5.2.5 Purpose-driven

The characteristic of *purpose-driven* is the largest group and consists of five aspects: continuous improvement with regards to sustainability, focus on function/fulfillment of need instead of a product or service, profit as an enabler of societal value creation, sustainability rather than profitability as the starting point of business decisions, and sustainability is the main purpose of business and integrated into the core of the business model (see figure 35).

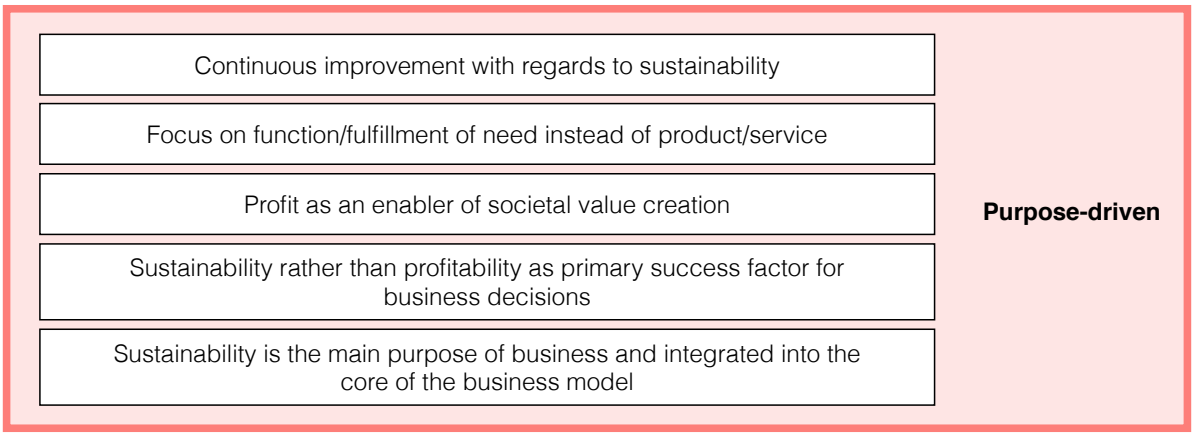


Figure 35: The five aspects of *purpose-driven*, source: own depiction

5.2.5.1 *Continuous Improvement with Regards to Sustainability*

Companies that employ an SBM constantly aim to improve their sustainability performance (Laasch, 2017; Lüdeke-Freund, Froese, & Schaltegger, 2019; Randles & Laasch, 2016; Wells, 2016). Creating societal value and contributing towards sustainability challenges is an ongoing effort, where companies strive for excellence (Laasch, 2017; Wells, 2016). The experts supported this argument and made the point of sustainability as a journey for companies. Interviewee B states: "You will not achieve everything from the beginning. The achievement, this ideal image, is, after all, an ideal image. But the exciting thing is: how do we set out on the path?" Interviewee J agrees and specifies: "You have to begin the journey, consistently and step by step. If you want too much at once, you will overburden yourself and your environment. And you will not be successful." Interviewee B adds the point that we do not live in a perfect world but have to start anyway. He states: "That means to consider: Where do I have

the greatest impact? And that's what I focus on. And I also accept that things are not yet perfect." Interviewee D supports the argument of sustainability becoming the mainstream but is still an ongoing process: "It would be wonderful; I like the idea of becoming ever more sustainable forever."

A TSBM reflects the ambition to constantly improve with regards to sustainability:

> *A TSBM continuously aims to improve on and strive for excellence in sustainability.*

5.2.5.2 *Focus on function/fulfillment of need instead of product/service*

Instead of supplying products or services to consumers, a TSBM focuses on providing functional value, switching from a supply-driven model to satisfying a demand (Boons & Lüdeke-Freund, 2013; Joyce & Paquin, 2016; Stubbs, 2017; Stubbs & Cocklin, 2008). Interviewee F specifies: "You need to start thinking about sustainability as human need oriented. You have to ask yourself, what is the human need and what is the most sustainable way to satisfy it." Interviewee K mentions the concept of sufficiency: "You should not sell more than what is needed." Interviewee B supports those arguments: "In many places, we sell people needs so that we can sell products. Or we create needs so that we can sell products. And actually, we do not need them at all, or they do not make us happy."

An example for such an approach is changing the pricing from product-based to charging for a "job-to-be-done" (Boons & Lüdeke-Freund, 2013, p. 16), or switching to product-service-systems, which potentially reduces material demands (Boons & Lüdeke-Freund, 2013; Jonker & Faber, 2019; Stubbs & Cocklin, 2008). Interviewee A suggests: "Offer only products that are really in demand."

A TSBM does not create artificial demands only to sell more or to increase profits:

> *A TSBM adapts a demand instead of a supply thinking and focuses on fulfilling customer or stakeholder needs and demands instead of selling a product or service.*

5.2.5.3 ***Profit as an Enabler of Societal Value Creation***

The measure of success for a TSBM is redefined to reflect its societal value contributions. Profit is seen as an enabler of such value creation. Furthermore, to redefine value, the current growth paradigm needs to be challenged.

5.2.5.3.1 Societal Value Contribution

Instead of concentrating on economic value creation, a TSBM focuses on the overall maximization of value across the economic, social, and environmental dimensions (Bocken et al., 2014; Bradley et al., 2020; Elkington et al., 2016; Lüdeke-Freund, Carroux, et al., 2018; O'Higgins & Zsolnai, 2018a; Stål, 2018; Stubbs, 2017). Such a focus on societal value maximization is one of the main characteristics that sets a TSBM apart from conventional business models (Bocken et al., 2014; Bradley et al., 2020). In fact, solely pursuing solutions that promise a business case poses a serious constraint on businesses; instead, a business model should aim for a "meaningful contribution by business to sustainable development that is neither induced nor limited by a business case" (Moratis & Melissen, 2020, p. 7). Interviewee A agrees with this perspective: "More and more companies are recognizing that we also have to look at what contribution we are making to society. Because we are actually much more dependent on society than we can imagine." Consequently, measuring success solely in terms of profit is not suited for a TSBM and the definition of success needs to be extended beyond profits, i.e., the "profit-normative" understanding of success (Stål, 2018; Stubbs, 2017; Upward & Jones, 2016; also chapter 2.2.4).

A TSBM aims to create societal value and contribute towards sustainable development (Elkington et al., 2016; Lüdeke-Freund, Carroux, et al., 2018; Moratis & Melissen, 2020; Stubbs, 2017; Upward & Jones, 2016). Interviewee G makes an important point: "Perhaps we need new indicators here, too. Because in the startup scene, for example, people celebrate when there's a unicorn, which only means that they're making big bucks, but it doesn't mean that they're making any contributions to society. And that's the only measurement right now. That's what's being celebrated in the media. If we don't find another way to solve this, it's stupid." Similarly, the measure of success for a TSBM needs to reflect its goal of contributing toward sustainability challenges, and it should be judged by this contribution. Hence:

> *The success of a TSBM is evaluated against its contribution to sustainable development and creation of societal value.*

5.2.5.3.2 Profit as a Means to an End not an End in Itself

Most of the SBM literature refers to profit as a way to create societal impact or as an outcome of a firm' sustainable business activities (Laasch, 2017; Morioka, Bolis, Evans, et al., 2018; Nosratabadi et al., 2019; Randles & Laasch, 2016; Schneider & Clauß, 2019; Spieth et al., 2019; Stubbs, 2017; Stubbs & Cocklin, 2008; Upward & Jones, 2016). In order to steadily contribute toward sustainable development, a business model also has to generate a steady stream of economic value (see section 5.2.3.1). However, generating profit is not seen as an end to the business activities but rather as a means to the end of solving sustainability challenges, or "sustainable organizations must make a profit to exist, but they don't just exist to make a profit" (Stubbs & Cocklin, 2008, p. 121). Interviewee B agrees: "The impact model should actually be in the foreground and the revenue model merely a means to an end." Growth in profit should solely reflect an increased ability to address sustainability challenges rather than higher dividends for the shareholders (Morioka, Bolis, Evans, et al., 2018; Spieth et al., 2019).

Growth in impact can, for example, be pursued by directly reinvesting profits back into the company, breaking with the convention to prioritize shareholders before other stakeholders (Nosratabadi et al., 2019; Stubbs, 2017). Value creation for all stakeholders is prioritized and replaces shareholder value creation as the main measure of success (Laasch, 2017; Upward & Jones, 2016). The point of impact growth is also further addressed in the next section.

In a TSBM, even more emphasis should be placed on solving sustainability challenges rather than simply creating social and environmental value, as in the case of SBMs. The measure of its success is directly connected to this contribution:

> *Financial profit in a TSBM is a means to enable contributions to sustainable development rather than an end in itself.*

5.2.5.3.3 Challenging the Growth-Model

Another reoccurring theme in the literature, as well as in the expert interviews, was challenging the current regime of infinite economic growth as the goal and measure of success of a business model (Kennedy & Bocken, 2019; Laasch, 2017; Schneider & Clauß, 2019; Stål, 2018; Stubbs, 2017; Wells, 2013). Suggestions to approach this topic range from de-coupling economic success from material consumption (Wells, 2013), to slow and limited economic growth (Stubbs, 2017), to organic growth, i.e., only growing through the company's means rather than involving investors (Schneider & Clauß, 2019; Stubbs, 2017). Interviewee G makes a similar point: "What I think is important is that the growth is organic growth. That means not to grow to reduce a few more costs and to upscale the business model, as you see with many start-ups. Which, by the way, is where many start-ups fail. But rather pursuing organic growth." Interviewee C agrees with a differentiated form of growth, while Interviewee D and J recognize the role of the underlying economic and financial system. J states: "And the growth mindset, this growth dynamic, where everything is built on it, pension funds,

business models, and economies of scale, that somehow you can break through that. That would be nice. And exciting."

Others suggest that growth should occur only by replacing unsustainable options instead of adding to overall consumption (Kennedy & Bocken, 2019; Stål, 2018), or aiming for an optimal scale even through de-growth to create societal value in the best possible way (Laasch, 2017). However, Interviewee D states the main challenge: "The thing is, very often sufficiency and de-growth are in direct opposition to the economic goal of a company." Interviewee A agrees with the importance of rethinking the current economic model but also emphasizes the difficulties: "I can only say that there are very few who have taken on this task so far."

A TSBM adopts skepticism toward the growth regime and challenges those beliefs. It aims for growth that replaces unsustainable options and focuses solely on growing its societal impact rather than profits or turnover:

> *A TSBM challenges the current growth paradigm and aims for growth of impact instead of growth in profits or turnover.*

Summing up:

> *The success of a TSBM is evaluated against its contribution to sustainable development and creation of societal value. Financial profit is a means to enable contributions to sustainable development rather than an end in itself. A TSBM challenges the current growth paradigm and aims for growth of impact instead of growth in profits or turnover.*

5.2.5.4 ***Sustainability rather than profitability is the starting point of business decisions***

Sustainability is considered the main priority for business decisions and is reflected in a fair pricing scheme.

5.2.5.4.1 Sustainability First, Profitability Second

In a traditional business model, profit is the main purpose, the main measure of success, and one of the main decision factors when evaluating business opportunities. Interviewee J laments: "Ultimately, the imperative is money, that is, that you continue to exist. The social, ecological levels, you do not have to be particularly good at that; the hurdles there are smaller that you are stopped. And that is why the focus is often on the financials. And even if you do not want it, this financial-market-oriented level still dominates." Interviewee E sees financial success measures even as a barrier to TSBMs: "So I think a very concrete hurdle is very often the ROI, which is defined by the company in advance, and often prevents other parameters or criteria from flowing into the measurement of success of my business model because I am very often still very sales-driven and then clearly prioritize this parameter."

While financial viability is important (see 5.2.3.1), a TSBM considers and balances the creation of environmental and social value (Lüdeke-Freund, Carroux, et al., 2018; Morioka, Bolis, & Carvalho, 2018; S. Schneider & Clauß, 2019). Interviewee J agrees: "The focus should not only be on economic success, but also on the social and ecological dimension." Interviewee E even mentions this as one of the defining success criteria for a TSBM: "The factor of whether an SBM is successful is if I stop prioritizing a criterion or a pillar too strongly."

Some firms are even prioritizing the creation of environmental or social value above economic value (Schneider & Clauß, 2019). Social business models invest all profits back into the company to increase their social impact; earnings are only intended to cover the costs, not to create a surplus (Yunus et al., 2010). Instead, the social impact, reflected in the "social profit equation" (Yunus et al., 2010, p. 318), is what is prioritized (see also O'Higgins & Zsolnai, 2018a; Spieth et al., 2019). This means that, for example, cost savings are not tolerated if they generate a negative social impact (Spieth et al., 2019). Other authors also propose that profit should not be the dominant factor for business decisions in an SBM (Jonker & Faber, 2019; Stubbs, 2017). Bradley et al. (2020) suggest that

businesses prioritize sustainable value creation once financial viability is achieved.

In the case of a TSBM, if a truly sustainable business has the choice between several business opportunities, it will choose the one with the highest sustainability impact, which still has economic viability (Dyllick & Muff, 2016). A TSBM is not constrained by the existence of a business case and does not prioritize financial value creation while still being financially viable (Moratis & Melissen, 2020). A TSBM can generate profit while aiming to contribute to sustainable development. Interviewee B adds: "The goal is to not just let things run on the side, but rather prioritize the holistic model." Such a view is in stark contrast to the common paradigm of choosing the option which creates the most value for shareholders.

> *A TSBM prioritizes contributions to solving sustainability challenges over generating profits in business decisions while staying financially viable.*

5.2.5.4.2 Fair Pricing

The importance of setting fair prices as part of the value proposition was stressed by various SBM papers (Lüdeke-Freund et al., 2016; Spieth et al., 2019; Stubbs, 2017; Wells, 2016). Fair pricing could mean increasing accessibility to the product for as many customer groups as possible (Lüdeke-Freund et al., 2016) or simply focusing on maximizing the positive societal value contributions instead of profit margins through the pricing model, for example, through high-quality products at appropriate prices (Spieth et al., 2019; Stubbs, 2017).

A TSBM aims for fair prices:

> *Prices in a TSBM are set to maximize societal value contribution rather than profits.*

Summing up this section:

> *A TSBM prioritizes contributions to solving sustainability challenges over generating profits in business decisions while staying financially viable. Prices are set to maximize societal value contribution rather than profits.*

5.2.5.5 ***Sustainability is the Main purpose of Business and Integrated into the Core of the Business Model***

A TSBM is cause-driven rather than profit-driven. Sustainability is integrated into its core, and vice versa, the TSBM is understood as a tool to further integrate sustainability principles. Lastly, the whole business model is aligned with the company purpose of contributing toward sustainable development.

5.2.5.5.1 Cause-Driven Rather than Profit-Driven

Traditionally, the main purpose of a business model is to create monetary value, usually for a small group of stakeholders such as shareholders or other investors. Interviewee B illustrates the problems of this approach when companies depend on capital markets: "My purpose is primarily to generate personal value for someone or, even worse, to add value to the capital market, because we simply have regulations where social and ecological costs are only seen as risk avoidance, but not really that you will add value and make contributions." He adds that this is often challenging for sustainable start-ups that depend on non-sustainable investors and consequently suffer from mission drift.

A TSBM does not solely aim to create economic value but also aims to create social and environmental value (Bocken et al., 2014; Morioka, Bolis, Evans, et al., 2018; Stubbs & Cocklin, 2008). Interviewee G adds: "Decisions are not made on the basis of the interest of individuals, but on the basis of the company's purpose and based on the problems for which solutions are to be created." Such societal value creation is the main purpose of TSBMs (Elkington et al., 2016; Joyce & Paquin, 2016; Laasch, 2017; Nosratabadi et al., 2019; O'Higgins &

Zsolnai, 2018b; S. Schneider & Clauß, 2019; Stubbs, 2017; Upward & Jones, 2016; Yunus et al., 2010).

A TSBM goes one step further than SBMs and explicitly connects the business purpose with macroeconomic sustainability challenges: "Positive contribution to solve sustainability issues and thus serving the common good becomes the main purpose of a truly sustainable business" (Dyllick & Muff, 2017, p. 17). The purpose is cause-driven rather than profit-driven, with the cause being contribution to solving the sustainability challenges of our time. The business model takes those challenges as a starting point for all its business activities and is clearly aimed at creating value for the common good (Dyllick & Muff, 2016). Interviewee B asks: "What is the goal of an organization? If I include this in the business model as you understand it and set myself clear goals, then it can work well." Hence:

> *Contributing to solving sustainability challenges and creating value for the common good is the main purpose of a TSBM.*

5.2.5.5.2 Sustainability at the Core of The Business Model

In a TSBM, purpose and mission are embedded and designed to be at the core and in the DNA of the model instead of being an add-on (Baue & Thurm, 2018; Bocken et al., 2014; Elkington et al., 2016; Freudenreich et al., 2020; Loetscher & Kreis, 2018; Lozano, 2018; Randles & Laasch, 2016; Stål, 2018; Stubbs, 2017). Interviewee D says: "In my personal view, we have to get away from this Mickey Mouse model of sustainability where economics is at the center and then environment and social sustainability are nice to have, little ears that just don't really count are just used as a marketing tool."

Sustainability should be the normal, mainstream modus operandi of the business model rather than something special or something that needs to be done additionally to standard business operations (Randles & Lwaasch, 2016). At the same time, the TSBM is also seen as a tool for integrating sustainability principles at the core and purpose of the company (Bocken et al., 2014; Morioka,

Bolis, & Carvalho, 2018; Morioka, Bolis, Evans, et al., 2018; O'Higgins & Zsolnai, 2018a; Stål, 2018). A TSBM is thus a reinforcing mechanism for sustainability. Interviewee I mentions B-Corps as an example for companies that "have already integrated sustainability very strongly into the core business." Interviewee B agrees: "It is important to anchor impact goals, whether social or environmental, at the core and DNA of the business model."

For a TSBM, the purpose of business, defined as contributing to sustainable development, is anchored at the very core of the business model:

> *The company purpose is integrated at the core of a TSBM. At the same time, a TSBM also serves as a tool to integrate sustainability principles at the core of the company.*

5.2.5.5.3 Business Model Aligned with Purpose

A TSBM aligns all its elements with the purpose of societal value contributions (Elkington et al., 2016; Lozano, 2018; Lüdeke-Freund, Froese, et al., 2019; Morioka, Bolis, Evans, et al., 2018; Wells, 2013, 2016). Those elements range from quality management (Wells, 2016); employee relationships (Freudenreich et al., 2020; Morioka, Bolis, Evans, et al., 2018; Stubbs, 2017; Wells, 2013) across the value chain (Elkington et al., 2016); operations, structures, and processes (Laasch, 2017; Stubbs, 2017); company culture and ethical values (O'Higgins & Zsolnai, 2018a; Stubbs & Cocklin, 2008); products and services (Spieth et al., 2019; Young & Reeves, 2020); or corporate governance (Morioka, Bolis, Evans, et al., 2018). Interviewee A also points out: "You have to integrate sustainability into the business processes. However, that varies depending on the company." Interviewee B further specifies: "You really need to anchor impact orientation in the DNA as a management tool. Then I can control it, and thus also really seriously integrate it into my entrepreneurial processes."

Alignment ensures high consistency between the purpose of the business model and concrete actions by the firm (Schneider & Clauß, 2019), ensuring that business opportunities contradictory to the purpose of the business model are

not pursued. Further, consistent behavior aligned with the purpose also creates credibility and reliability among the stakeholders. Interviewee G further elaborates this point: "Are you just doing it for the show or have the aspects of sustainability really permeated the company deeply?" She continues: "…considering sustainability every time you make relevant decisions, from the partner you work with, to the employee you hire, to the logistics system. All these facts are relevant to the business model. When you always ask yourself the question: 'Okay, am I creating problems right now, or am I perhaps also supporting other companies or other people in acting sustainably?'"

In a TSBM, everything is aligned to the purpose of creating societal value:

> *In a TSBM, all elements are coherently aligned to its purpose.*

Summing up the section on sustainability as the main purpose of a TSBM, we can say that the characteristics of a TSBM are:

> *Contributing to solving sustainability challenges and creating value for the common good is the main purpose of a TSBM. The company purpose is integrated at the core of the business model. At the same time, a TSBM also serves as a tool to integrate sustainability principles at the core of the company. Consequently, all elements are coherently aligned to their purpose.*

An overview of the topics discussed under the characteristic of *purpose-driven* is provided in table 9.

Sub-themes of *Purpose-Driven*	**Description**
Continuous improvement with regards to sustainability	A TSBM continuously aims to improve on and strive for excellence in sustainability.
Focus on function/fulfillment of need instead of product/service	A TSBM adapts a demand instead of a supply thinking and focuses on fulfilling customer or stakeholder needs and demands instead of selling a product or service.
Profit as an enabler of societal value creation	The success of a TSBM is evaluated against its contribution to sustainable development and creation of societal value. Financial profit is a means to enable contributions to sustainable development rather than an end in itself. A TSBM challenges the current growth paradigm and aims for growth of impact instead of growth in profits or turnover.

Sustainability rather than profitability is the starting point of business decisions	A TSBM prioritizes contributions to solving sustainability challenges over generating profits in business decisions while staying financially viable. Prices are set to maximize societal value contribution rather than profits.
Sustainability is the main purpose of business and integrated into the core of the business model	Contributing to solving sustainability challenges and creating value for the common good is the main purpose of a TSBM. The company purpose is integrated at the core of the business model. At the same time, a TSBM also serves as a tool to integrate sustainability principles at the core of the company. Consequently, all elements are coherently aligned to its purpose.

Table 9: Overview of the characteristic *purpose-driven*, source: own depiction

5.2.6 Transformative

The characteristic of *transformative* consists of three aspects: engages in changing the rules of the game, engages on different levels, and responsible consumption is encouraged (see figure 36).

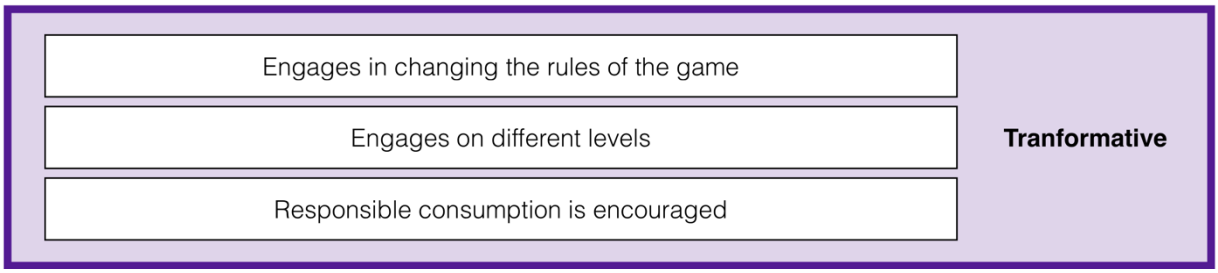


Figure 36: The three aspects of *transformative*, source: own depiction

5.2.6.1 *Engages in Changing the Rules of the Game*

In order to change the rules of the game toward a just and sustainable world, a TSBM adopts transformative thinking and takes on a leadership role in this transformation.

5.2.6.1.1 Transformational Thinking

The obligation and ability of companies to transform the current system toward greater sustainability was established in chapter 2.1. The WBCSD states in Vision 2050: “While business cannot transform systems on its own, it can contribute to—and relentlessly support—change, through its own actions and

in its interactions with other stakeholders" (WBCSD, 2021, p. 9). Similarly, the SBM literature underlines the role of business models in changing current approaches, paradigms, and practices (Baue & Thurm, 2018; Dyllick & Muff, 2017; Elkington et al., 2016; Loetscher & Kreis, 2018; Moratis & Melissen, 2020; Morioka, Bolis, Evans, et al., 2018; Stål, 2018; Stubbs, 2017; Young & Reeves, 2020). The business model as a tool for transformation is especially suitable due to its systemic perspective that reaches beyond the boundaries of a single firm and, therefore, has the ability to influence the wider value network it is embedded in, such as the supply chain or industry (Baue & Thurm, 2018; Bocken et al., 2014; Morioka, Bolis, Evans, et al., 2018; Stål, 2018).

To trigger the change, scholars call for a mindset shift. For example, Elkington et al. (2016) speak of a reboot of beliefs and business models to push and sculpture this transformation according to a vision of the future. A TSBM should be created with the future rather than the current state in mind. I call this perspective *thinking for the future*. On the other hand, thinking *from the future* means that future challenges, as well as the desired future state of the economy or industry, are considered (Scharmer, 2009). The business model should reflect the idea of an alternative, more sustainable state of the economy and the driving force to get it there. It should inherit transformative characteristics, meaning it should be designed *from* the future (Moratis & Melissen, 2020). A TSBM consequently either aims at creating a new market or transforms an existing one (Dyllick & Muff, 2016, 2017). This transformative ambition is rooted deep within the design of the business model (Moratis & Melissen, 2020; Stubbs, 2017).

Another mindset shift that needs to happen is that instead of simply reacting to external pressures or regulations to be more sustainable, companies should proactively engage in being more sustainable and go beyond legal requirements. Such a shift means to see sustainability as an opportunity rather than as a threat (Bocken, 2021; Loetscher & Kreis, 2018). This shift is in line with the change in perspective that companies need to undertake from inside-out to outside-in, where sustainability challenges are taken as a starting point to develop marketable solutions to that challenge. Companies need to engage for

radical or "exponential" (Elkington et al., 2016, p. 3) change rather than incremental adjustments, which also includes challenging, disrupting, or even breaking with today's paradigms and beliefs (O'Higgins & Zsolnai, 2018a). Interviewee J agrees: "You can integrate sustainability when you see it as an opportunity and as a serious positioning or differentiation possibility."

A TSBM must reflect this shared responsibility of actively "changing the rules of the game" and transformation of societal contexts (Dyllick & Muff, 2016, p. 167):

A TSBM reflects transformative thinking from and for the future.

5.2.6.1.2 Leadership for Sustainability

Committed leadership is necessary to set a company on the path toward sustainable transformation (O'Higgins & Zsolnai, 2018a). By taking the lead in such a process, a company can show the way for others, can push transformation through lobbying, and can actively set standards for stricter government regulation (Dyllick & Muff, 2016). Interviewee B asks: "Who are the people who are working vigorously toward a grandchild-friendly future?" This ambition for sustainability leadership was also reflected in the SBM literature (Baue & Thurm, 2018; Freudenreich et al., 2020; Joyce & Paquin, 2016; O'Higgins & Zsolnai, 2018a; Stubbs, 2017; Stubbs & Cocklin, 2008). An SBM is aware of its potential to transform the current system and paradigm by taking the right actions (Joyce & Paquin, 2016).

Section 5.2.1.3.4 Active Management of Partners already established that a TSBM helps and supports partners in their sustainability transformation to increase the overall impact of the value network by, for example, the sharing of best practices. To do so, a TSBM would need proactive and engaged leadership (Stubbs, 2017). Interviewee B points out such companies: "How can we now make the expertise we have available to others?" He mentions the company Soul Bottles, a manufacturer of glass bottles who addresses the problem of plastic waste as an example, and elaborates their approach: "We can put our

profit into the maximum sale of any bottles, then, of course, we will continue to reduce other plastic bottles. But actually, people are already starting to copy our model; now we are using our power, our financial power, our brand power to empower other organizations and create an incubator of organizations that are working toward the same impact goal."

A TSBM also engages with external entities to drive change (Stubbs, 2017). Section 5.2.1.3.3 showed the potential of involving competitors in such a collaborative, transformative effort. It concluded: *A TSBM actively integrates its competitors to break down barriers and transform sectors and industries toward TBST*. Such a collaborative effort to change the rules of the game could, for example, involve creating industry roundtables for sustainability, creating awareness among consumers, or lobbying for new industry-wide sustainability standards (Dyllick & Muff, 2016, 2017). Interviewee B suggests creating alternative associations: "If we want real change, actors have to join together. And not just in these individual associations." Interviewee I mentions companies such as Patagonia or Ben & Jerry's as positive examples to communicate their mission beyond the boundaries of their firm: "The point is not only to push their own business model but also to somehow help shape the public–political discourse, to carry their values very strongly to the outside world and thus also change the industry."

Furthermore, the experts especially stressed the importance of positive examples. Interviewee A argues: "…because it automatically radiates, when a company, especially large companies, go ahead and practice sustainability." Interviewee G agrees and pushes the need for the business model to be "a role model in the sense that you set examples that things can be done differently, both for the government and for other companies, as well as for investors and so on." She concludes: "We need positive examples. That means entrepreneurs and companies. That is a huge force and power that they have in the economy and society, and for our planet." Interviewee B points out that a lot of best-practice examples already exist, some of which are showcased in chapter 6.

Interviewee B concludes: "Transformational power and remaining a pioneer; those are ideal-type companies for me."

Understanding the TSBM as a tool for lobbying is another important part of leadership for TBST. Such lobbying approaches include influencing the government or collaborating with NGOs to implement sustainability legislation (Joyce & Paquin, 2016; Morioka, Bolis, Evans, et al., 2018; Stubbs, 2017). Interviewee K clarifies: "Lobbying is normally quite a negative term. But for a change to take place, it is of course also necessary to change the framework conditions." He describes different ways to engage in such lobbying efforts, for example, through funding an endowed professorship to push knowledge generation or to engage in political processes. Interviewee B even identifies as a lobbyist himself: "I became a lobbyist by accident because I realized that these individual activities could never have enough impact."

For a TSBM, lobbying is seen as a positive tool for change:

> *A TSBM takes on a leadership role in the transformation toward a sustainable economic system and lobbies for change.*

Summing up this section on the characteristic of transformative for TSBMs:

> *A TSBM reflects transformative thinking from and for the future. It takes on a leadership role in the transformation toward a sustainable economic system and lobbies for change.*

5.2.6.2 ***Engages on Different Levels***

The business model needs to reflect an engagement with the whole value network of the business. Rather than creating a limited impact at the firm level, a TSBM aims to engage on a sectoral, cross-sectoral, or even societal level to change the current paradigms and practices of an industry or value chain (Aagaard, 2019; Baue & Thurm, 2018; Dyllick & Muff, 2016; Laasch, 2017). At an individual level, a TSBM aims to engage others for behavioral change; at the micro level, it engages others to create a different kind of business model; at the meso level, it aims to transform industries; and at the macro level, it encourages

systems transformations (Baue & Thurm, 2018). In this way, wider economic concepts, such as the planetary boundaries, can be broken down to the business level (Stål, 2018; see also 5.2.2).

This interconnectedness is also stressed by Interviewee J: "We need to connect the levels; a transformation is almost not possible without really trying to improve and tackle that on all levels … The legislature and politicians are called upon to create certain framework conditions so that sustainable economic activity is possible at all. Then the industries are called upon to work together to find solutions to their environmental and social challenges. And, yes, the consumers are needed as well." Interviewee K elaborates: "As a company, I see myself as a social player. I take other industry partners, customers, civil societies with me, educate them and contribute to this transformation."

Therefore, a TSBM does not limit its transformations to its own company level but considers and engages at different levels:

> *Sustainability efforts of a TSBM aim to engage with others at different levels, from individual, to sectoral, cross-sectoral, and societal, to change the current economic paradigm and practices.*

5.2.6.3 ***Responsible Consumption is Encouraged***

A TSBM encourages consumers or other stakeholders to adopt more sustainable consumption behavior (Boons & Lüdeke-Freund, 2013; Dyllick & Muff, 2016; Lüdeke-Freund et al., 2016; Moratis & Melissen, 2020; Morioka, Bolis, Evans, et al., 2018; Nosratabadi et al., 2019; Stubbs, 2017). Moratis and Melissen (2020) suggest using mechanisms of human behavior to promote sustainable consumerism and to encourage sustainable consumption patterns. Customers should also be encouraged to take responsibility for their consumption impacts and habits (Lüdeke-Freund et al., 2016). Encouragement should also extend to general awareness building and education of stakeholders, such as the wider business community or investors (Stubbs, 2017). Interviewee J agrees: "Consumers are also called upon to buy and consume sustainably. Educational

work is needed. Information is required." Creating awareness for critical issues is essential to the transformation of current approaches and business practices. This topic is further addressed in chapter 6.3.

A TSBM recognizes the importance of changing consumption behavior:

> *The TSBM encourages consumers to adopt sustainable consumption patterns and creates awareness for the topic in order to transform the current paradigm of consumption.*

An overview of the topics discussed for the characteristic of *transformative* is provided in table 10.

Sub-themes of *Transformative*	**Description**
Engages in changing the rules of the game	A TSBM reflects transformative thinking from and for the future. It takes on a leadership role in the transformation toward a sustainable economic system and lobbies for change.
Engages on different levels	Sustainability efforts of a TSBM aim to engage with others at different levels, from individual, to sectoral, cross-sectoral, and societal, to change the current economic paradigm and practices.
Responsible consumption is encouraged	The TSBM encourages consumers to adopt sustainable consumption patterns and create awareness for the topic in order to transform the current paradigm of consumption.

Table 10: Overview of the characteristic *transformative*, source: own depiction

5.3 Summary: The Truly Sustainable Business Model Petal

This section summarizes the characteristics of a TSBM and highlights the essential points. The summary also shortly illustrates the consequences for the business model elements: *value proposition*, *value creation and delivery*, and *value capture and recovery*.

5.3.1 Collaborative

A TSBM is *collaborative*. For the *value proposition*, collaborative means that the **interests of a variety of stakeholders** are considered and balanced in its design.

Stakeholders of a TSBM have a **wider definition** than those for traditional or even SBMs, including actors such as **society**, marginalized groups, or those without a voice such as the **planet**, the environment, or ecosystems.

A TSBM cannot exist in isolation; it exists within a wide value network. The whole value network of a TSBM needs to be sustainable and to consist of partners that **share** the **same values** and **purpose** as the TSBM. The TSBM actively engages and collaborates with all its stakeholders to *create and deliver* social, environmental, and economic *value* in and for the value network. The relationships with all those stakeholders are **mutually beneficial** and built on **trust**. A TSBM helps and **supports partners** in their **sustainability transformation** to increase the overall impact of the value network, for example, and actively builds and engages communities around a shared purpose. A TSBM also reaches out to its competitors and cooperates with them to break down barriers and transform sectors and industries toward TBST in the act of **coopetition**. Relationships with suppliers are based on the principles of **ethical and sustainable sourcing** from partners within this network. Lastly, a TSBM does **not outsource** its **negative impacts** in the supply network, i.e., suppliers, consumers, or other actors.

The **impacts** on the environment and society of the TSBM are **proactively** and **transparently communicated** to all stakeholders. The *value capture and recovery* of a TSBM distributes all the benefits and the costs of value creation fairly among all actors involved in this process.

5.3.2 Conserving

A TSBM has the characteristic of *conserving*. The *value proposition* **considers** and **respects** the **planetary** and **societal boundaries**, i.e., the absolute limits of ecosystems and the absolute thresholds of a just society.

Recognizing and **respecting** the **planetary** and **societal boundaries** is also crucial for *value creation and delivery*. Furthermore, a TSBM must aim to **regenerate**, instead of simply compensating for negative impacts.

Contributions toward solving sustainability challenges are *captured* from the consumption of products and services and other activities arising from the TSBM.

5.3.3 Contributive

A TSBM is *contributive*. Its *value proposition* focuses on **increasing positive impacts** for the **common good** rather than being less unsustainable. Furthermore, the *value proposition* cannot be based upon unsustainable activities and is designed with a **long-term perspective** in mind.

The focus on improving the positive is also prevalent for *value creation and delivery*: a TSBM creates **positive environmental**, **social**, and **economic value** for itself, its stakeholders, environment, and society.

Lastly, a TSBM is **built to endure**. The *value capture* is designed to be **economically viable** and financially sustainable, resilient, and stable in the **long run**.

5.3.4 Outside-in

A TSBM adopts an *outside-in* perspective. It takes a **relevant sustainability challenge** as a **starting point** and **translates** it into a **business opportunity.** Solving such a sustainability challenge is integrated into the *value proposition* through the business model's purpose. Instead of curing symptoms, the TSBM addresses the **root causes**. A TSBM recognizes the interconnectedness of a company with its environment and engages in a **business–society dialog** through its value proposition to actively increase the system's sustainability. TBST is context-dependent; consequently, a TSBM offers tailored solutions to specific sustainability challenges and considers specific local, sectoral, or **societal contexts** and differences when designing the value proposition.

The **impacts** of the TSBM, including its value network, on the environment and society are measured and **considered in business decisions**. The *value capture*

considers, **internalizes**, and prices **negative externalities** that arise from business activities.

5.3.5 Purpose-driven

A TSBM is *purpose-driven*. Contributing to **solving sustainability challenges** and **creating value for the common** good is the **main purpose** of a TSBM. This company purpose is also reflected in its adoption of an outside-in perspective (see the previous section), the purpose is **integrated** at the **core** of the *value proposition,* and all other elements are coherently **aligned** to it. At the same time, a TSBM also serves as a tool to integrate sustainability principles at the core of the company. Furthermore, a TSBM adopts demand thinking instead of supply thinking and focuses on **fulfilling** customer or stakeholder **needs** and demands instead of selling a product or service.

A TSBM **continuously** aims to **improve** on and strive for excellence in sustainability throughout its activities.

A TSBM **prioritizes contributions** to solving sustainability challenges over generating profits in business decisions while staying **financially viable**. In an iteration between value proposition and *capture*, prices are set to **maximize societal value contribution** rather than profits, for example, through providing access to essential products and services for as many people as possible. Consequently, the **success** of a TSBM is evaluated against its **contribution to sustainable development** and its **creation of societal value**. **Profit** is a **means** to enable contributions to sustainable development rather than an end in itself. A TSBM **challenges** the current **growth** paradigm and aims for growth of **impact** instead of growth in profits or turnover.

5.3.6 Transformative

A TSBM is *transformative*. The *value proposition* reflects transformative thinking and a desired state of the **future**.

To trigger change, the TSBM takes on a **leadership** role in the transformation toward a sustainable economic system and becomes a **lobbyist for change**. For this process, **different levels** and disciplines are engaged with—from individual to sectoral, cross-sectoral, and societal—to change the current economic paradigm and practices. The engagement also involves **encouraging consumers** to adopt sustainable consumption patterns and **creating awareness** for the topic to transform the current paradigm of consumption.

I call those six characteristics the *truly sustainable business model petal*. They represent ambitious goals for a company to transform their business model to be truly sustainable. In practice, an organization might not success to be equally accomplished in all of the characteristics at once. However, it still can be used as a guiding star during the sustainability journey.

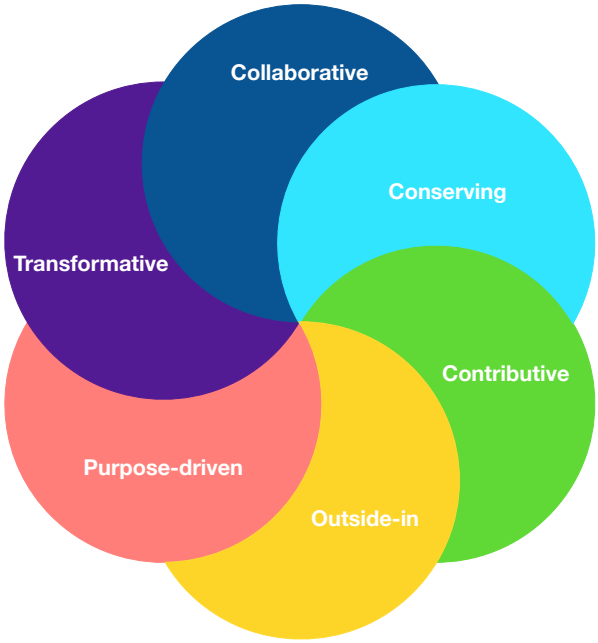


Figure 37: The *truly sustainable business model petal*, source: own depiction

To sum up, a TSBM takes **sustainability challenges as a starting point** to develop business solutions to solve those challenges. In doing so, it takes on a **systemic perspective** and respects the **boundaries** of the planet and society. A TSBM jointly creates **positive value for the common good** and the company, within and for its **value network** of like-minded **partners** who share the same goal and **purpose** of effectively **contributing to sustainable development**. It

takes on a **future-oriented perspective** of a sustainable society and planet, and actively and collaboratively engages in transforming the current economic system toward this **ideal state**.

6 Ideal Types of Truly Sustainable Business Models

This chapter illustrates what a TSBM could look like through ideal types, which are context-specific manifestations of a TSBM. The ideal types are possible enablers to help solve the three broader challenges of SPC identified in chapter 4.1: *excessive use of resources*, *mass consumption patterns*, and the *disconnect between consumers and producers*. A few ideal types that enable a transition toward SPC will be introduced for each of these challenges. They range from business models for circularity to consumer education and awareness, and include regional production and consumption systems. This chapter does not aim to paint a complete picture of every ideal type that might exist to address challenges of production or consumption. Instead, it seeks to show examples of ideal types to illustrate TSBMs in a concrete context and break down the abstract characteristics to a more tangible case level. These cases are the main focus of this chapter.

Elkington, Lim, and Smith (2016) suggest that those business models that are likely to shape the future are already emerging and visible somewhere, "like early mammals scurrying around the feet of soon-to-be-extinct market dinosaurs" (p.13). Those business models can transform business relationships and enable the power to change social systems at the same time. Therefore, three selected cases that show potential to transform the current way of doing business are introduced for each of the three overarching challenges of SPC: *Oxara* (see 6.2.2), which reduces the resource use in construction, *Veganz* (see 6.3.2), which aims to change consumption behavior, and *Crowd Container* (see 6.4.3), which recreates the relationship between consumers and producers and reconnects them. The cases were chosen from industries deemed especially important for SPC by the experts (see chapter 4.1). The questions for the TSBM elements raised in chapter 5.1 serve as a guideline for the illustration of the cases. This chapter above all aims to inspire by showing positive examples that are already reshaping and transforming our current economic system.

Section 6.1 elaborates on how ideal types can work as enablers for SPC. Furthermore, the section also connects existing enablers for the three challenges identified in chapter 4 to solutions on a business model level. Those business models are possible ideal types of TSBM for SPC and work as enablers for a transformation from a business level. These ideal types aim to connect businesses with challenges on a macro level and help bridge the big disconnect.

The remainder of the chapter is structured according to the three sustainability challenges of SPC and introduces the respective ideal types to address them. For each of the challenges, a case is used to illustrate an ideal type in a concrete context.

6.1 Ideal Types for Sustainable Production and Consumption

This section connects enablers that have been identified for SPC with potential ideal types of TSBMs. The first part shows ways in which businesses can influence a transformation through their business model. The second part introduces the concept of ideal types for TSBMs and connects them to the three challenges of SPC identified in this thesis.

6.1.1 How Companies Can Make a Difference Through Their Business Models

Companies can affect SPC in three ways (WBCSD, 2008). First, they can directly influence sustainable production by implementing sustainable production processes, such as closing-the-loop or cradle-to-cradle approaches. Applying those approaches also involves collaboration with other businesses. Companies can also directly influence consumers' purchase decisions through *choice editing*, which means removing unsustainable products and services from the market. This measure is most effectively implemented in collaboration with other industry actors. Second, firms can indirectly influence standards of SPC through lobbying policymakers, for example, to establish industry standards and regulations or eco-labels. Third, companies can educate consumers about sustainable consumption choices and raise awareness about sustainability

issues (see figure 38). Consequently, TSBMs for SPC can pursue any of the three possibilities.

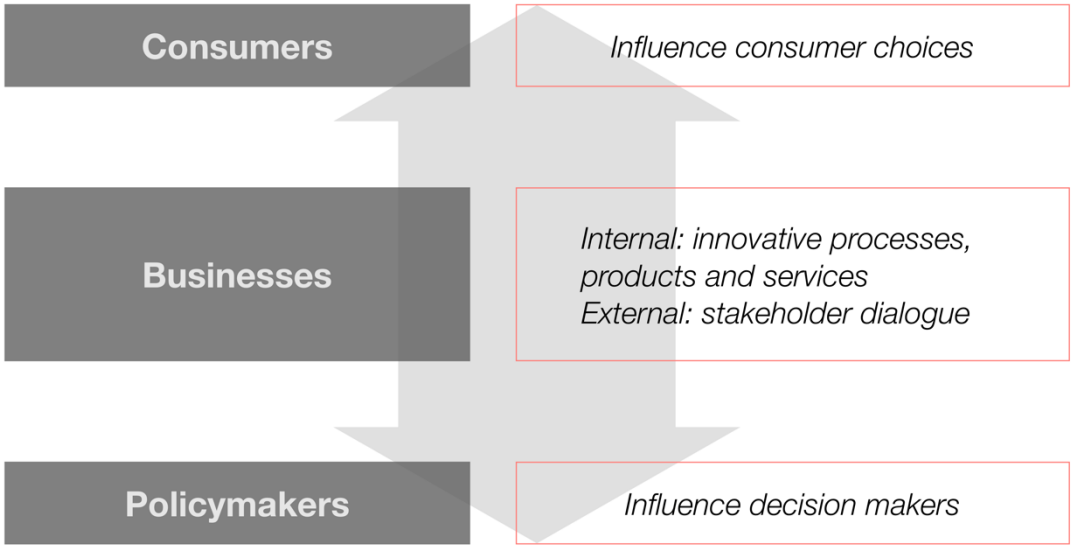


Figure 38: How businesses can influence SPC, own depiction, inspired by WBCSD (2008)

6.1.2 Ideal Types as Enablers for Sustainable Production and Consumption

This section introduces the general concept of ideal types and their function in this thesis. Ideal types are enablers for a transformation toward a sustainable production and consumption system and represent concrete solutions on a business model level. Therefore, they aim to connect the macro with the business level. This section first defines ideal types and delimits them against the concept of business model patterns, and then identifies possible ideal types to address the three challenges of SPC.

6.1.2.1 *Patterns vs. Ideal Types*

Chapter 2.3.5 revealed that the concept of business model patterns does not match the context of TBST, as patterns refer to context-independent constructs that are universally valid and can be applied to every context (Lüdeke-Freund, Bohnsack, et al., 2019). However, if a business model is truly sustainable, its potential contribution to solving sustainability challenges is dependent on its specific context (Dyllick & Muff, 2016). Furthermore, the sustainability challenges can vary by nation, region, or context, and the solutions need to be

specifically designed to match those distinct conditions (Messerli et al., 2019; Muff et al., 2017). Interviewee K agrees that patterns are difficult to apply to sustainability and stresses that "the integration into the business model can differ significantly from case to case. I can imagine that actually, the mechanisms behind it are most relevant." He suggests that "… perhaps companies need something like heuristics for arriving at design parameters" and elaborates that "… they do not apply in exactly the same way to every context. From my point of view, it's always the higher-level aspect that helps to arrive at a business model." Transferring those insights to this thesis reveals that the characteristics of TSBMs are such a higher-order concept. Ideal types work to illustrate possible manifestations of those higher-order elements in concrete contexts.

One particular stream of business model literature regards a business model as a design guideline or recipe (Casadesus-Masanell & Ricart, 2010; Gassmann et al., 2016). However, this thesis argues that not all business models can serve as a blueprint for transforming organizations toward a more sustainable state. Instead, this thesis refers to *ideal types of TSBMs*, which introduce theoretical propositions or models of social situations and processes, such as sustainable business models (Stubbs & Cocklin, 2008). They are a "representation of the idea of a sustainable organization" (ibid., p. 107), which focus on what might exist rather than the status quo. An ideal type is "a 'North Star' that helps orientation" (Desing et al., 2020, p. 3). Max Weber originally coined the term, stressing that one of the challenges of such ideal types is identifying their underlying characteristics or features (Desing et al., 2020; Weber, 2017). The characteristics of TSBMs developed in chapter 5 represent an answer to this challenge (and can be used to evaluate the ideal types). Ideal types can also be compared against existing cases, which will be done in sections 6.2.2, 6.3.2, and 6.4.3.

Ideal types are not exclusive. One ideal type might contribute to solving various sustainability challenges, and multiple ideal types could address one specific sustainability challenge. A TSBM might be primarily aimed at addressing

climate change and still have positive spillover effects on a different sustainability challenge, such as biodiversity loss.

6.1.2.2 *Connecting Ideal Types to Challenges of SPC*

In previous research and frameworks like the SDGs, several enablers for SPC have been identified (Akenji et al., 2015; Bengtsson et al., 2018; Hobson, 2013; Lebel & Lorek, 2008; Lorek & Fuchs, 2013; Lorek & Spangenberg, 2014; One Planet Network, 2017; Tukker et al., 2008; UN, 2021c). Enablers for SPC symbolize approaches to the transformation toward sustainable patterns of production and consumption. Those existing approaches vary widely regarding their specificity and their ambition. Some are on a rather abstract and unspecific level, like the prevention of rebound effects and decoupling, while others are very specific and on a product level, like lifecycle thinking or green production and products. These inconsistencies accentuate the need for a business-specific approach to SPC. Current concepts are more a collection of ideas on approaching the transition toward sustainable production and consumption patterns rather than a guide for businesses to address this topic effectively. Therefore, this thesis suggests ideal types as enablers of SPC on a coherent business model and value network level. The ideal types view SPC through the lens of TBST, meaning they take an outside-in perspective and focus on positive value creation, ensuring that the sustainability challenges are addressed effectively. For each of the three challenges of SPC that this thesis covers, enablers from the literature are analyzed and potential ideal types of TSBMs are identified.

6.1.2.2.1 Responsible Resource Use and Regeneration

Chapter 4.1.1 illustrates the various problems that arise from the excessive and growing use of resources. As enablers for a *sustainable and responsible use of resources,* researchers suggest a variety of options ranging from green products, for example, through increased longevity, to energy efficiency and green supply chains (Bengtsson et al., 2018; Lebel & Lorek, 2008; Tukker et al., 2008).

Nonetheless, those micro-level, inside-out approaches are not enough for a fundamental transformation toward sustainable resource use and to bridge the big disconnect. A TSBM adopts a systems perspective, mirroring the fact that systemic solutions are also needed for ideal types. On a systemic level, the decoupling of resource use and human well-being is a popular suggestion (Akenji et al., 2015; One Planet Network, 2017; UNEP, 2021a).

"In general, decoupling means removing the link between two variables" (Akenji et al., 2015, p.28). *Relative decoupling* describes how the environmental impact grows less than the overall economy (Tukker, Tischner, & Verkuijl, 2006). This development, for example, describes efficiency effects due to advanced technology and optimized processes; it means "fulfilling the needs of all while using fewer resources, including energy and water and producing less waste and pollution" (Akenji et al., 2015, p. 7). *Absolute decoupling,* on the other hand, shows a diminishing environmental impact during a growing economy.

For a truly sustainable use of resources, our environmental impact needs to be diminished to an extent that allows us to stay within the planetary boundaries while recognizing the limits of our society, as well as to restore exploited resources and regenerate negative impacts (see also 5.2.2.3 and Raworth [2018]). A popular topic to address excessive resource use, mentioned both by the experts and in the literature, is the *circular economy*. Stuchtey, Ekvist, & Zumwinkel (2017) identify three pillars of a responsible use of resources: clean energy, a circular system, and regenerative systems. Desing et al. (2020) connect circular economy approaches to the planetary boundaries. Consequently, circular business models are proposed as a possible ideal type to address excessive resource use (see section 6.2). More specifically, the experts mentioned sharing, product-service systems, and closing-the-loop as concrete business models that drive the circular economy. This thesis explores *business-to-business (B2B) sharing* and *product-service systems* as two examples of possible ideal types for TSBMs.

6.1.2.2.2 Changing Consumption Patterns

Chapter 4.1.2 shows some of the most important downfalls of our current mass consumption patterns. The current section aims to identify enablers that help transform the paradigm of mass consumption toward sustainable, responsible, and ethical consumption behavior.

Section 2.1.3.3 points out that the efficiency-based, weak sustainable consumption paradigm only leads to incremental enhancements of the situation, and a different approach is needed to induce systemic change. Strong sustainable consumption focuses on reducing the overall level of consumption and radically transforming consumption patterns rather than focusing on efficiency, i.e., it takes a systemic approach instead of focusing on individual product-based solutions (Lorek & Fuchs, 2013). On such a systemic level, consumption behavior is also influenced by other consumers and social groups, calling for a systemic solution in addition to individual efforts to induce behavior change on a greater scale.

Similar to the umbrella term *circular economy* on the production side, approaches for strong sustainable consumption are often also referred to as *sufficiency* or *sufficiency-driven* (Bocken & Short, 2016; Sandberg, 2021). Sufficiency explicitly addresses consumers with high consumption rates, mainly in the Global North, to reduce overall consumption and rethink consumption patterns (Lorek & Fuchs, 2013). Sandberg (2021) distinguishes between absolute reductions in consumption and a change toward more sustainable consumption patterns, which the author refers to as *modal shift* (see also Bengtsson et al. [2018]; Lebel and Lorek [2008]; Tukker et al. [2008]).

Section 6.1 shows that, broadly speaking, firms can influence consumer behavior either directly through measures such as *choice editing* or indirectly through building consumer awareness and education. This thesis focuses on *consumer education and awareness* business models and a modal shift through *collaborative consumption* as two examples of possible ideal types for TSBMs.

As production and consumption have some overlaps and are highly connected, sufficiency and circular approaches also intersect and share similarities. Interviewee C supports this argument: "Actually, circularity and sufficiency belong together to avoid enormous rebound effects; they are very closely linked." Interviewee E connects the necessity for a circular approach with the illusion of green growth and refers to "the notion that resource efficiency makes you more sustainable […] this fools companies into believing that they can grow faster than their resources use, but a circular approach is only possible by including sufficiency." This mutual dependency is, for example, caused by taking a lifecycle approach to a product, which considers both the production and the consumption phase, and trying to optimize societal value creation across the whole lifetime. Therefore, practices such as sharing are proposed both for reducing resources in the production phase and for reducing consumption. The previous section focuses on production-oriented B2B sharing practices, while this section illustrates business-to-customer (B2C) and customer-to-customer (C2C) approaches. It is not enough to only look at production or consumption for a systemic transformation, instead, holistic approaches and combinations of measures are needed to induce the necessary change. Nevertheless, each topic is important and thus needs to be regarded separately as well (Muff et al., 2017).

6.1.2.2.3 Reconnecting Consumers and Producers through Transparency and Cooperation

Chapter 4.1.3 identifies the challenges of a disconnect between consumers and producers as twofold. First, tracing products back to their origin is nearly impossible due to the complexity and opacity of GVCs. Second, consumers are disconnected from the context in which the products they consume are manufactured because of geographical dispersity and international labor division. Therefore, this last section of chapter 6.1 introduces two possible enablers to bridge the disconnect between production and consumption: transparency of value chains and new forms of cooperation and relationships between consumers and producers.

Unlike the topics of sufficiency and circular economy, reconnecting producers and consumers is less prominent in the business model literature. Nonetheless, it is regarded as an important topic to address in order to transform the current production and consumption system to be truly sustainable and support sustainable development.

Ideal types to bridge the disconnect must either create transparency in the supply chain, enable close cooperation between consumers and producers, or bring them closer together. A *direct trade* business model increases transparency in the supply chain and builds on a new relationship between consumers and producers. *Regional production and consumption systems* have the potential to bridge the disconnect between producers and consumers by shortening the physical distance between production and consumption.

Table 1 provides an overview of the challenges of SPC that are touched upon in this thesis and the selection of ideal types that aim to address those challenges. The following sections further describe those ideal types, each one introducing a case that illustrates the ideal types in practice.

Challenges of Sustainable Production and Consumption	**Ideal Types as Enablers to Address the Challenge**
Excessive resource use	Circular models such as B2B sharing and product-service systems, and regenerative models
Mass consumption patterns	Sufficiency-based models such as collaborative consumption or consumer education and awareness
Disconnect between production and consumption	Transparency and cooperation, such as direct trade or regional production and consumption systems

Table 11: Overview of challenges and the selection of ideal types that aim to address them, source: own depiction

6.2 Addressing the Challenge of Excessive Resource Use

Chapter 4.1.1 uncovers the challenges that arise from excessive and growing resource use. This part of chapter 6 first introduces circular business models as

possible ideal types of TSBMs for SPC and goes on to present a case to illustrate what such an ideal type could look like in practice.

6.2.1 Circular Business Models

This section introduces circular business models as a possible ideal type of TSBMs. It briefly reflects the need to move from a reduction- and efficiency-based approach to regenerative thinking, and showcases the many different directions within circular business models, including servitization, through product-service systems, or reducing resources through sharing. The business models in this section will be limited to the production side. In this section for instance, *B2B sharing* is briefly introduced, while *collaborative consumption* is addressed in chapter 6.4, which focuses on (private) consumption. The circular business models directly contribute toward SPC through a change in production processes and products and services (see 6.1.1).

The concept of the circular economy, respectively of circular business models, is a popular topic in research and practice. This popularity is also reflected in the interviewees' answers, which touch on a multitude of aspects. Interviewees A, C, D, E, F, I, J, and K highlighted the transition toward a circular economy as one of the major challenges of SPC. For example, Interviewee C underlines the importance of closing the loop: "To achieve a positive handprint, I have to move in the direction of a circular economy and closed loops for materials." Interviewee E however points to the often overlooked social dimension by stating: "The difficulty of the circular economy perspective is that it often only considers environmental aspects and the social component is neglected."

Despite the popularity of the concept, there is still no common understanding of the circular economy (Desing et al., 2020; Geissdoerfer, Savaget, Bocken, & Hultink, 2017). This thesis adopts a top-down approach to the circular economy, as suggested by Desing et al. (2020), for two reasons: First, the authors conceptualize this top-down approach as an ideal type to use as a guideline, matching the objective of this thesis. Second, the ideal type aims to break down

a macro-level concept such as the planetary boundaries to the business level, matching the goal of TBST. Therefore, "The Circular Economy is a model adopting a resource-based and systemic view, aiming at taking into account all the variables of the system Earth, to maintain its viability for human beings. It serves the society to achieve well-being within the physical limits and planetary boundaries" (Desing et al., 2020, pp. 7–8).

Interviewee K adds that the circular economy often reflects an inside-out thinking by only focusing on reducing the negative, a criticism that is also shared by Desing et al. (2020). Interviewee K suggests including regeneration in the understanding of a circular economy. This suggestion aligns with Jonker and Faber (2019), who propose a restorative economy as an evolutionary step beyond the circular economy. Therefore, the circular economy approach needs to be complemented and extended by an understanding that reflects the focus on positive value creation and includes social aspects. In the context of circularity, such positive approaches have also been referred to as net-positive, accretive, or regenerative (Stuchtey et al., 2017).

Interviewee F also differentiates between the overall concept of circularity and concrete approaches: "Circularity is a point of view, an overarching recipe, you have to think much more circularly about the value chain, the way we use the material. Then there are certain archetypes that describe a concrete business model." A variety of those approaches and strategies exist for implementing a circular economy. Desing et al. (2020) identify advances from research and practice, which range from strategies such as a reduction in resource intensity or closing-the-loop that focus on materials (Bocken, Olivetti, Cullen, Potting, & Lifset, 2017) to consolidated strategies of reducing, reusing, recycling, or recovering that aim at the more systemic level of sustainable development (Kirchherr, Reike, & Hekkert, 2017). Another popular approach within circular business models is sharing of products (Bocken, Schuit, & Kraaijenhagen, 2018; Lüdeke-Freund, Gold, et al., 2018). Interviewees E and F propose product-service systems as interesting business models within a circular economy approach.

For this thesis, two approaches are discussed as potential ideal types of TSBMs to address excessive resource use: product-service systems and B2B sharing.

6.2.1.1 *The Ideal Type of Product-Service Systems*

Product-service systems (PSS) shift the focus from simply selling products to providing services that fulfill the exact customer needs (Lozano, 2018; Tukker et al., 2006). They explicitly focus on the function of a product, following what interviewee F calls "human needs orientation." In general, three different types of PSS can be distinguished: product-, use-, and result-oriented services (Tukker, 2004). While a product-oriented service merely adds a service component to the sale of the product, with use-oriented service the company retains product ownership and sells the use of the product. Such a model incentivizes companies to design long-lasting, easy-to-repair products that potentially decrease resource use. Lastly, result-oriented services no longer focus on a product, but on the result, for example through a pay-per-use approach. Instead of buying a specific product, consumers pay for the provision of a unit of service (Bocken, Mugge, Bom, & Lemstra, 2018). This model has a high potential to change consumers' consumption habits to use less, and yields the highest potential for dematerialization through servitization (Tukker, 2004). As with all ideal types, the potential impact of such a model is also dependent on the context and design of the business model (Bocken, Mugge, et al., 2018).

There are different ways to design a servitization of the business model. Studies show that setting the right incentives and choosing a design that fits the particular context of the company and is intentionally set to address a sustainability challenge is crucial to create value for the common good (Bocken, Mugge, et al., 2018). It must be noted that models in this category can be more sustainable than just selling products, but not necessarily. For example, leasing a car might lead to the user treating it carelessly (Tukker et al., 2006). Adverse impacts from the product might move to another place in the value chain instead of completely dematerializing the service (Baue & Thurm, 2018). Avoiding outsourcing of negative impacts in the value chain is an essential

characteristic of a TSBM. A lifecycle analysis might uncover those negative impacts and show possibilities to eliminate them (Baue & Thurm, 2018). Apart from environmental benefits, a PSS might also yield social value, for example by increasing the accessibility to a service or to a product. People might not be able to afford a drill, but they could "pay-per-hole" (Bocken, Mugge, et al., 2018).

To sum up, under the right circumstances and through careful design, a servitization approach could be an ideal type for TSBM that addresses excessive resource use. A PSS can also be combined with a sharing model, as described in the next section.

6.2.1.2 *The Ideal Type of B2B-sharing*

While consumer-focused sharing models like Airbnb or Uber have been popular for a while, B2B approaches are less common or researched (Grondys, 2019). One example of a B2B sharing project that is embedded into a wider circular economy project in the business district of Les Deux Rives in Paris (Radjou, 2018). In a pilot stage, 30 companies from the private and public sector collaborated in three areas: a reduction of disposable food packaging, aggregating carpool services, and collective management of waste. B2B sharing of office space, employees, equipment, or services is an integral part of the project (Radjou, 2020b). A similar project was also recently launched in Amsterdam, which aims to become a circular city following a planetary and societal boundaries approach (City of Amsterdam, 2021).

A successful, ideal-type B2B sharing approach can only address excessive resource use by focusing on the system and value network rather than a single company. Sharing of physical assets and intangible resources like employee knowledge or even patents yields huge potential to create value for the common good. The French company Vénétis employs different professions to share them on a project basis with member organizations (Vénétis, 2021). The companies

are flexible in their needs, and the employees benefit from job security (Radjou, 2020a).

B2B sharing seems like a promising ideal type to create positive societal value while using existing resources efficiently and sustainably.

6.2.1.3 *Outlook: From Closing-the-loop to Regenerative Business Models*

Closing-the-loop and focusing on resource efficiency is only the first step toward a TSBM. On top of that, a TSBM needs to focus on positive value creation, for example through the adoption of regenerative approaches.

Regenerative business is an emergent concept that gradually becomes more popular (Elkington, 2020; Hahn & Tampe, 2020; Radjou, 2020b). For example, Hahn and Tampe (2020) introduce three regenerative strategies for businesses: restore, preserve, and enhance. Restoration, in this case, means to restore the original state, for example of nature; preservation refers to protecting the current state; and enhancing refers to positive value creation for socioeconomic and environmental systems. Regeneration approaches should not be limited to nature only, but also extend to people, places, and the planet (Radjou, 2020a). For a truly sustainable approach to circularity, integrating those regenerative approaches in the business model is essential.

An example of one of the few regenerative business model approaches is that of sustainability pioneer Interface. While other companies aim for climate neutral production, Interface aims further ahead. The factory as a forest approach seeks to mirror a natural ecosystem and create the same ecosystem services, for example clean air or water (Mathew, 2018; Radjou, 2020a).

6.2.2 Case: Oxara[11]

Our goal is to provide sustainable and affordable housing all over the world.

Vision Oxara (Oxara, 2020a)

Oxara is an ETH spin-off that aims "to collectively create an innovative and sustainable [construction] industry" by providing a sustainable alternative to concrete (Oxara, 2020a, para. 2). The company was chosen to illustrate how a TSBM could address the excessive use of resources. It is the youngest of the three cases and is still developing its business and revenue model. Therefore, Oxara is an interesting example demonstrating how a TSBM is formed and a company is founded with the explicit aim to solve a sustainability challenge.

During his time as a doctoral student at ETH Zurich, Oxara co-founder Gnanli Landrou developed the admixture *Oxacrete*®, which is combined with excavation materials to derive *Cleancrete*®, a cement-free, non-toxic substitute for concrete (Oxara, 2020b). Oxara's mission and vision are reflected in its name: derived from Lamb-Kabyè, a language from northern Togo, it refers to a gathering or community. The company understands the transformation of the construction industry as a collective endeavor and aims to build a community around the brand. The company is in a pilot phase, collaborating with partners to develop their products and enter the market in Switzerland. Their aim is to establish the first commercial project by 2022 as a proof of concept.

This case is structured as follows: First, a short overview of the story and motivation to found Oxara is provided. Next, the business model is analyzed, starting with the two distinct sustainability challenges Oxara aims to address. The last part of the section showcases how Oxara contributes to solving the challenge of excessive resource use.

[11] Unless otherwise indicated, the information in this case is taken from the interview with Gnanli Landrou and Roland Weippert.

6.2.2.1 *The Story and Motivation behind Oxara*

Landrou grew up in a house built out of earth materials in Togo. This kind of housing is widespread in the region and all over Africa and has a long tradition. However, due to the influence of Western societies, earth buildings are associated with a low social status, making modern cement or brick houses. For most people, building with commercial building materials is too expensive. Landrou explains his starting point to found Oxara: "I wondered, 'how do you make these local resources more appealing for people so that they use it as a nice construction product?'"

When he came to Europe, Landrou realized that there is an environmental component to building with earth materials as well. He learned about the significant emissions caused by cement production and the depletion of resources such as sand. Landrou connects those challenges to the vision of Oxara: "… bridging these two challenges is the vision and motivation of Oxara. On one side, how do you provide this type of decent, safe, and modern, affordable construction material for modern construction in Africa or other places? And in the Global North, we aim to make concrete or brick processing much more eco-friendly, less energy-intensive, and [more] resource-efficient."

6.2.2.2 *Analyzing the Business Model of Oxara*

The business analysis is guided by the questions raised in 5.1. An outside-in perspective is adopted by describing the challenges Oxara aims to address through sustainable and affordable housing and sustainable cement production. As Oxara is only 18 months old, some aspects of the business model are still being developed.

6.2.2.2.1 The Challenges of Affordable Housing and Unsustainable Cement Production

Through its business model, Oxara aims to address two challenges: the lack of affordable housing, especially in developing countries, and the unsustainability of cement production. Landrou explains: "the goal is to enable access to

sustainable, affordable housing in the world through the use of local resources and the transformation of construction waste."

Estimations project that by 2025, at least 1.6 billion people will not have access to safe, adequate, and affordable housing, and already today, around 200 million people live in slums (Woetzel, Ram, Mischke, Garemo, & Sankhe, 2014). Inadequate housing has significant negative effects, for example on the development and health of children, mental health, and heart disease (AlphaBeta, 2017; Bashir, 2002). Chapter 4.2.2.2 introduces the significant business opportunities that arise from solving this challenge; affordable housing could generate USD 1,080 billion per year and generate 14 million jobs in Africa alone.

The second challenge that Oxara addresses is unsustainable cement production. After water, cement, or more specifically its ingredients sand, gravel, and crushed rock, are the most consumed resources on Earth, making it the most used man-made material on Earth (Rodgers, 2018; Torres et al., 2021). Just last year, anthropogenic mass exceeded the biomass of all living things on Earth. The growing demand for these construction materials is responsible for ecosystem degradation and social conflicts. Cement, the main ingredient in concrete, is responsible for around 8% of global CO_2 emissions (Lehne & Preston, 2018). Sand scarcity drives the disappearance of whole beaches; eroding shorelines threaten people's livelihoods and animals living on the riverbanks (Niranjan, 2021). Especially in India, the rising demand for sand fuels a criminal mafia network that thrives on corruption and even murder.

Using local resources like excavation material sustainably and affordably presents a significant business opportunity. Landrou stresses these opportunities: "The discussion should take a different perspective: there are two billion people who can buy an affordable home. We want to do business around it. So, with two billion people, even if you sell your house at one Franc, you will make two billion. So, it's kind of a massive opportunity indeed."

6.2.2.2.2 Value Proposition

For Oxara, the vision of solving societal challenges serves as a guideline throughout the whole business model. Roland Weippert, Oxara's Strategy and Business Development lead, elaborates: "… we follow the vision and mission intrinsically by focusing on using excavation materials. This focus means having a local source of material, which is typically a waste material that goes to a landfill and which we recover now." Local and ethical sourcing is an approach that also extends to the admixture, which will be sourced locally. Landrou stresses their holistic understanding of corporate sustainability: "… sustainability is not only about the technology, but it also extends to the things that happen on the side of the technique. If, in the end, our technology is great, but I need to start everything on a platform that consumes more or less the similar amount of energy or CO_2, I'm not generating any good." Weippert explains that using the vision and mission as a guideline also extends to project planning and the selection of partnerships: "we are addressing companies that show their willingness to also go in our direction … we have to stick to our vision and mission and clearly communicate what our expectation is at the end of the day." If a potential project or partnership does not fit into the vision and mission, it will not be pursued.

Currently, Oxara is testing different materials such as bricks and cement blocks with their partners to prepare for market entry. The company aims to provide a service-based model next to selling the admixture. This model includes testing local excavation materials to fit the admixture, training local producers and building a community around the brand to exchange knowledge. Landrou stresses the regional aspects of their business model: "… we try to rely on existing infrastructure and resources that are local around the network, or the region, or the area of construction projects. And this is really important for us not to bring out a lot of resources from outside."

Oxara's alternative *Cleancrete* causes 90% less CO_2 emissions than conventional concrete and is also 90% less expensive (Oxara, 2020b). Additionally, it is made

of excavation material directly from the building sites, and non-toxic mineral ingredients, making it easy to recycle – an essential step toward "closing the loop." The admixture accelerates the hardening of the earth-based bricks or cement blocks and increases the material's workability (Oxara, 2020b). The resulting building material can be used for floors and non-load-bearing walls, an area of construction that yields a market potential of CHF 700 million in Switzerland alone (Keller, 2019). Oxara's business model, therefore, has the potential to create value for itself, stakeholders in the area of affordable housing, and the environment. While the ability to address the resource intensity of cement production through the business model is also dependent on the availability of the right technology, the choice to pursue affordable housing is a choice of value proposition.

6.2.2.2.3 Value Creation and Delivery

Oxara products are not yet on the market, and the company is in its first financing round to raise capital. "I think we are not at the scale where we say we are creating massive value because it's mostly a projection that we could have," admits Landrou. He describes the potential value creation in terms of savings of various inputs in conventional concrete, the production of which is energy and resource intensive. Apart from reducing CO_2 emissions and saving a substantial amount of energy, Oxara's product also saves water, which is usually needed, for example, to wash the gravel. By using the local material from the construction sites, effects on biodiversity are also minimized. Landrou reflects: "Those are things that indeed could be interesting to quantify exactly. But we don't have it yet. What we do have is an implementation of Oxara technology. For Oxacrete and Oxabrick, if we capture a certain market size, how much CO_2 we can reduce, how much sand we are able to reduce, this is data that we calculate."

6.2.2.2.4 Value Capture and Recovery

Landrou reflects on his understanding of success for his company: "… once we are on the market, one could judge in terms of how much affordable housing we enable. Another point would be how much sand mining resources have been saved. Indirect impacts, for example how many kids were not forced to stop school, would also be quite interesting for us." Next to the external measures, Landrou also stresses the importance of internal factors: "I think it's also the goal of how happy and content our employees are about the work they do, or feel like they are contributing to something, that would also mean a lot."

Economic viability and long-term economic success are also important. "I have two hearts beating in my chest here," Weippert reflects on the two sides of creating impact and being profitable. "Success is about living up to that vision and mission, to bring circularity and sustainability into these construction materials, into these buildings, into these living spheres. Success in five or ten years is not having saved the world, but we saved millions of cubic meters of sand from being used as a waste of material, or the millions of tons of CO_2 saved by just not producing conventional cement." Weippert also stresses the importance of having investors that do not demand maximization of short-term profits but respect that Oxara is a purpose-driven company with a vision and aim for stable long-term returns. As the company is still in the start-up phase, judging its business model's profitability and commercial success is not possible yet.

Oxara's value capture aims to benefit the company through its profits and generate societal value through the provision of affordable, safe, and sustainable housing. Furthermore, environmental value is created by using local materials instead of relying on imported and exploiting materials like sand and significantly saving emissions. Using excavation material from the building sites that usually goes to landfills is also a way to recover value.

6.2.2.3 *Summary: Characteristics of the Business Model of Oxara*

Founder Gnanli Landrou takes on the sustainability challenge of providing affordable, sustainable, and safe housing as a starting point for his business, adopting an *outside-in* perspective. Furthermore, the business model has a strong *conserving* component, recognizing the planetary boundaries and aiming to address the root causes of insufficient housing and resource extensive cement production. Through its business model, Oxara aims to *transform* the construction industry *collaboratively* with partners. Industry partners and investors are selected based on shared values. The whole business model will be aligned with the company *purpose* to create positive value for the common good. Oxara takes a long-term perspective to business planning and primarily aims to create societal value while being financially viable.

The success of a TSBM is measured by its value creation for a variety of stakeholders and by its contribution to solve the sustainability challenges it aims to address. Once fully operational, Oxara has great potential to provide affordable housing and offer a sustainable, local alternative to resource-intensive cement. The company mostly aims to directly impact SPC through internal innovations but also involve stakeholders (see 6.1.1). Oxara is a suitable example to illustrate what an ideal type that addresses excessive resource use could look like in practice.

6.3 Addressing the Challenge of Mass Consumption Patterns

Chapter 4.1 illustrates some of the challenges that are caused by unsustainable consumption behavior and mass consumption patterns. Sufficiency-based models are introduced as an umbrella term for potential ideal types of TSBMs that transform current consumption toward sustainable, responsible, and ethical consumption behavior. *Consumer education and awareness* and *collaborative consumption* are introduced as concrete examples for such ideal types. Lastly, the case of Veganz illustrates what a business model based on educating consumers to transform their behavior could look like in practice.

6.3.1 Sufficiency-driven Business Models

Business models for sufficiency "deliver sustainability by reducing absolute material throughput and energy consumption associated with provision of goods and services by moderating end-user consumption: encouraging consumers to make do with less." (Bocken & Short, 2016, p. 46). Section 6.1.2.2.2 introduces two approaches to sufficiency: *absolute reductions* and *modal shifts*.

Interviewee J sees a reduction in consumption as a crucial lever for SPC and exemplifies "… the biggest impact is when we need less. For example, if textile consumption can be reduced by 30%, we have a lot of footprints that are reduced by 30%, just like that." Interviewee A agrees: "This issue of sufficiency requires that we have much more appreciation for the products that we have, rather than always saying, 'I need more.'"

Another central theme is the satisfaction of needs rather than the advertisement for wants (Bocken & Short, 2016). Interviewee F elaborates: "… it is about a human needs orientation, [it] has to be the approach in which you start to think about sustainability: What is the human need and what is the most sustainable way to provide [for] it?"

The following two sections introduce possible ideal types for sufficiency-based business models, focusing on consumer education and awareness and collaborative consumption.

6.3.1.1 *The Ideal Type of Consumer Awareness and Education*

A topic that was deemed as particularly important by the experts is consumer education and awareness. Consumer education is defined "as a process of developing and enhancing skills and knowledge to make informed and well-reasoned choices that take societal values and objectives into account" (OECD, 2009, p. 3). It should foster the ability to think critically and thus raise awareness for the relevant sustainability issues. A fundamental shift in consumer behavior is only possible through education and by creating awareness for a specific topic (Morone, Falcone, Imbert, & Morone, 2018). Interviewee L sees positive

development in this crucial issue and recognizes a growing pressure from the customers: “I think I do see a shift in that more customers are aware of and demanding sustainability and therefore forcing businesses to go in that direction.”

Through their marketing, companies have a significant impact on creating, co-creating, and changing consumer culture. Consequently, they can also do this in a responsible way to foster a change toward sustainable consumer behavior. Interviewee B criticizes: “In many places, we sell people needs only to sell products. Or we create needs so that we can sell products. And actually, we don’t need them at all, and they don’t even make us happy.” Interviewee J reflects on the shared responsibility of consumers to also change their behavior and exemplifies: “The appreciation of products and services must be increased. Clothes, for example, have now gone from being a commodity to a consumer good within two generations.” Interviewee B stresses the importance of transparent communication to create awareness for sustainability topics: “… the best way is through transparent communication, in other words, by making it clear what I’m doing differently … and then enter into a dialog with my target group.”

Building a community reinforces the potential to create awareness and to create multipliers for sending the message. Interviewee L notes: “… employee engagement is important; every employee is a customer of some kind. So, I also make sure they understand what their role is in a company and how that affects not just the bottom line of the company but also how that plays a part in the whole supply chain of what they produce… Every company you’re working for, every employee is a consumer of that region. How can they change their mind in their own daily lives?” Another example of using the community to start the transformation is crowdsourcing. Interviewee B explains: “And that’s not an anonymous crowd, but actually your own community, your own target group. And that’s where I can build strong organizations, even though the underlying conditions for the transformation are not that far advanced.”

One company that places a high importance on educating its consumers is the US-based company Patagonia. With their campaign Don't Buy This Jacket, they raised awareness of the fact that too many things are being bought, instead proposing reusing, repairing, and recycling as an alternative (Stock, 2013).

Consumer education and awareness are huge levers for SPC and must be an integral part of a TSBM. Building a community around the brand and its business model can reinforce awareness.

6.3.1.2 *The Ideal Type of Collaborative Consumption*

Collaborative consumption, and especially its subcategory, the sharing economy, is one of the major trends of the past decades. Over 100 companies globally can be categorized as belonging to the sharing economy (Yeomans, 2018). This is primarily due to the development of online peer-to-peer sharing platforms, enabling consumers to share their possessions with strangers instead of only their immediate environment. It is estimated to generate USD 15 billion in revenue globally, potentially growing to USD 335 billion by 2025 (PWC 2014). The sharing economy is diverse and encompasses the rental market with providers like Airbnb, for-profit service providers such as Uber, and gifting, as in the case of the company Freecycle (Martin, 2016). While the sharing economy mainly refers to the sharing of goods, the term collaborative consumption is the overarching term for the phenomenon. Collaborative consumption includes second-hand marketplaces, the gig economy for temporary labor, swapping platforms, time banks (time as currency), and peer-to-peer lending (Frenken, 2017). Interviewee A explains that those models are not exactly new: "These are actually old models from neighborhood assistance that could be used. However, the fact that status and belonging are so important means that everyone thinks they have to have their own lawnmower and garden shears and all these other things, instead of coordinating with their neighbors or accessing platforms where you can easily rent something like that, that is a problem right now."

Sharing models could decentralize and disrupt current socioeconomic and technical regimes and paradigms for consumption and production (Boons & Bocken, 2018; Martin, 2016). Yet, there is an ongoing debate about the nature of this development; some see it as a more sustainable form of consumption, others as another form of neoliberalism in disguise. Interviewee J is skeptical: "The difficulty here is that these sharing models are becoming more and more of an IT model, where the profits are then brought to the players providing these IT tools, whose business models are also geared to growth, to being as cheap and efficient as possible. And that then, in the end, the consumer or the provider is exploited."

An analysis of the discourse on online sharing platforms showed that they could be regarded through varying perspectives (Martin, 2016). On the one hand, sharing can be understood as an economic opportunity, a more sustainable form of consumption, or a pathway to a decentralized, equitable and sustainable economy. Yet, it can also be made responsible for creating unregulated marketplaces, reinforcing the neoliberal paradigm, or just as an incoherent type of innovation. For example, Uber is often accused of exploiting its drivers. Interviewee B adds: "… only a sharing economy or collaborative consumption in itself is not the added value if in the end the DNA of an organization just does not fit." Effects of sharing might cause unintentional, unsustainable rebound effects. For example, car sharing might reduce the number of vehicles bought by consumers but can also lead to people switching from using public transportation. As business models and the sharing economy are systemic, assessing those impacts is crucial to identify TSBMs. This assessment is not easy as the sustainability impact of such models is highly contextual.

A company that succeeded in building a sense of community through sharing and avoids overconsumption and rebound effects is *Streetbank*. The online platform allows neighbors to share products from drills to ladders, give away things they no longer need, share skills, and help each other (Streetbank, 2021). A similar initiative, called *Pumpipumpe*, also exists in Switzerland. The company relies on an online platform as well as an offline component, where people

indicate the products they are willing to share through stickers on their mailboxes (Pumpipumpe, 2021).

Collaborative consumption can be an ideal type of TSBMs when it relies on sharing existing resources instead of incentivizing more consumption. Furthermore, it needs to create positive societal value through enabling access to products or services for people that had no access before. Building a community and connecting people is another way to allow additional positive value.

6.3.2 Case: Veganz[12]

> *Motivating people to adopt a plant-based lifestyle as well acting more responsibly toward our environment, thereby creating a sustainable future for all living beings on the planet.*
>
> Vision Veganz (Veganz, 2021b)

The German vegan food producer Veganz was chosen to showcase how (mass) consumption patterns can be gradually changed toward a more sustainable state. A central theme of its business model is to create awareness for problems associated with mass consumption of animal products and offer vegan alternatives for those products. Veganz offers various products, ranging from vegan honey, *Ohnig*, to a cashew-based camembert named *Cashewbert*. The brand recently placed third in the ranking of Germany's most innovative brands, just behind Tesla and Too Good To Go, indicating that vegan products moved out of a niche into the mass market. It is also the most established company of the three cases.

This case is structured as follows: First, a short overview gives insight into the motivation and story of how Veganz was founded. Next, the business model is described. Finally, the characteristics of the business model of Veganz are

[12] If not otherwise indicated, the information in this case is taken from the interview with Moritz Möller, Head of Marketing and board member at Veganz.

illustrated and the company's contribution toward more sustainable consumption patterns are summarized.

6.3.2.1 *The Story and Motivation behind Veganz*

Veganz started as a community brand and the first vegan supermarket chain in 2011. At that time, people living on a plant-based diet had to check every ingredient to see if a product was vegan or not. Moritz Möller, chief marketing officer of Veganz, recalls: "… back then, a vegan supermarket was a huge thing, and we also had a lot of support within the community, because it was a big topic for them." Since then, the company has changed its business model three times: first from a vegan supermarket to a wholesaler, then to a full-range vegan retailer. Jan Bredak founded the company to provide low-threshold access to vegan food and create awareness for a climate-friendly diet. He states that we make decisions "every day … with knife and fork" (30:39) through our consumption behavior.

Today, Veganz sells 120 different vegan products in 28 different countries worldwide (Veganz, 2021a). The focus has shifted from accommodating vegans to providing sustainable, climate-friendly, and healthy food for everyone.

6.3.2.2 *Analyzing the Business Model of Veganz*

This section illustrates the business model of Veganz, using the questions posed in 5.1 as orientation (see figure 30). In terms of changing consumption behavior, the business model follows a modal shift approach, switching from high-impact to low-impact consumption behavior (see 6.3.1). Furthermore, Veganz aims to influence SPC through less impactful production directly and indirectly through consumer education and awareness (see 6.1.1).

6.3.2.2.1 The Challenge of Animal Products

Veganz addresses the challenges associated with mass consumption of animal products through its business model, such as impacts on climate change or biodiversity.

The consumption of animal products doubled in only 60 years, between 1950 and 2009 (Gladek et al., 2016). Projecting this development into the future will lead to a quadrupling of animal protein consumption by 2050. Chapters 4.1.1 and 2.1.2 show that food production is responsible for one third of CO_2 emissions and over half of pressure on biodiversity. Animal products such as meat, eggs, dairy, and aquaculture products provide 18% of the global calorie supply and 37% of overall proteins (Poore & Nemecek, 2018). Nevertheless, they require 87% of global farmland and account for 56 to 58% of emissions caused by overall food production. Moving to a plant-based diet could lead to a reduction of as much as 76% in land use, 49% reduction in CO_2 emissions, and 19% reduction in water use.

"With a plant-based diet, of course, you have a huge lever to change something. Because we all eat something at least three times a day," explains Möller. However, even a reduction of the consumption of animal products and other discretionary products with a high impact on land use, such as sugar, alcohol, or coffee, has a significant effect on reducing environmental impacts (Poore & Nemecek, 2018).

Communicating the impacts of products to the consumers is essential to induce the necessary behavior change to limit climate change and other related sustainability challenges. Explaining the potential of a climate-positive diet also encourages the consumers to change their behavior and demonstrates that change can also be triggered through actions on an individual level. For most of the products, this impact is not visible. In general, the food industry suffers from a lack of transparency, primarily due to the complexity of global supply chains (see also 4.1.3.1 and 6.4.3.2.1). However, consumers demand more information on the origin and the impact of the products they buy. Veganz addresses this

challenge through close cooperation with Eaternity, proving a score for the CO_2 emissions, water use, animal welfare, and the protection of the rainforest (Veganz, 2021c). Veganz takes a leading role in establishing environmental impact scores within the industry and also cooperates with its competitors to further push the diffusion of those scores.

6.3.2.2.2 Value Proposition

The overall goal is to enable a sustainable future for the planet by providing low-threshold access to plant-based food. This value proposition directly provides value to the customer through the product. It is not only directed at vegans but explicitly aims to include flexitarians as well. By offering a sustainable product that enables a climate-positive diet, positive environmental value is created for the planet.

The key in providing such a sustainable product is to be transparent about its impacts. Veganz cooperates with Eaternity, a Swiss organization specializing in measuring the environmental footprint of food (Eaternity, 2021). Through their databank, they can identify the largest possible levers to enhance the products and the right questions to ask the producers. For each of its products, Veganz indicates a sustainability score across the four categories of climate, water, animal welfare, and rainforest (see figure 39). The absolute numbers from Eaternity are compared against 110,000 products in the German food sector through the app Codecheck (Veganz, 2021c). The star ratings are therefore also based on a comparison with similar products. A one-star product worsens our collective eco-balance; two stars mean the product is better than average, and finally, three stars indicate that the product complies with a climate-positive diet.

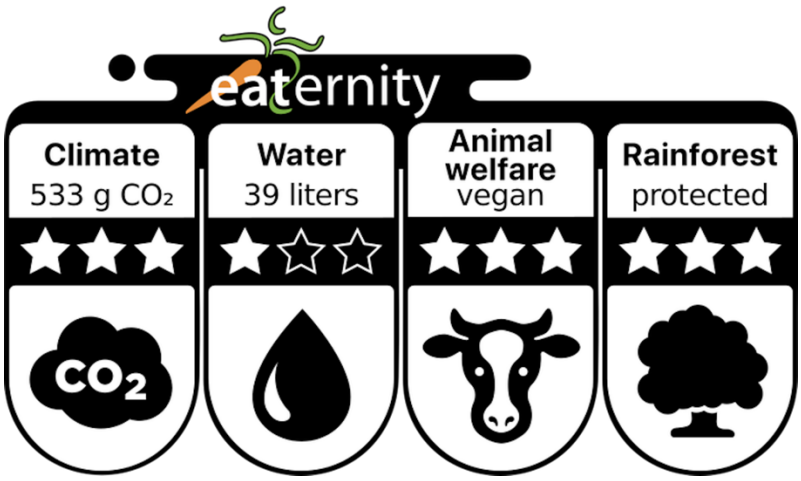


Figure 39: Sustainability Score Cashewbert, source: Veganz (2021d, fig. 1)

"We also show on our products when a product is bad. We explain quite clearly on the website why something is good or bad. And we explain what you can do about it," clarifies Möller. For example, the rating indicated above for a vegan cheese is within a climate-friendly diet for three out of four categories. Only the water footprint shows room for improvement. Veganz openly communicates that the high water footprint is caused by the cultivation methods of cashew nuts in Vietnam (Veganz, 2021d). Founder Jan Bredak sums it up nicely: "…telling the truth is the best marketing" (Schlieder, 2020,21:42-21:45).

Another critical aspect of the value proposition is to offer the product in sustainable packaging which at the same time complies with industry standards of food safety. Constant improvements on the packaging and offering the most sustainable option are priorities, even if it cuts the margins.

The final point is to offer products with a positive health benefit. Möller elaborates: "Sustainability, from our point of view, means to adopt a 'planetary lifestyle.' In other words, consumers want to consume, but they don't want to do anything harmful to the planet or their bodies. Health and sustainability are closely connected."

6.3.2.2.3 Value Creation and Delivery

The value creation and delivery of Veganz are based upon close collaboration and communication with a variety of actors. Möller explains: "We have an

extensive network that is also extremely important to us and contributes to our success."

For some of its products, the company relies on external producers that must comply with an environmental and social code of conduct. For every new product, the impacts are measured according to the sustainability rating and identify areas of improvement. "Sometimes we develop products that are not 100% sustainable at first, but they are then improved over time," explains Möller. Such enhancements could mean that a supplier changes to renewable energy or that a product is sourced from a more sustainable source. For example, olive oil could be sourced from a region with less water scarcity. Constant improvements, identifying the right partners, and building up a sense of sustainability with them is not without its difficulties "… it is, of course, also an investment for our partners. Finding the right partners and building up the relationship so that they go this way together with us is, of course, a challenge… naturally, we prefer people who have the same mindset, who want the same thing." Veganz commits to long-term partnerships and supports those partners to become more sustainable. They also push their partners to become more sustainable, for example by suggesting to their retailers, such as Rossmann or dm, to adopt CO_2 labels for their private brands. Partnerships also extend to the competition. Veganz joined a petition initiated by Oatly that demanded mandatory CO_2 labeling for food.

However, it is not always possible to implement improvements immediately, justifies Möller: "So we can't change some things right away. But at least we have an awareness of the problem." What differentiates Veganz is the transparent communication, also of the shortcomings: "Being transparent means that we have a position, and we are also vulnerable in this position because we are open about critical issues. And say, okay, we have a bad CO_2 value now, but other companies don't talk about it at all. That really is a huge difference." Creating awareness and educating customers is crucial for a transformation of consumer behavior. Veganz sees itself in an active role to shed light on the many challenges of a sustainable diet. Möller elaborates: "How can

we act in our communication to bring about changes in behavior for a sustainable future?" He admits that this might sometimes be challenging, for example to explain the many requirements for packaging to sufficiently protect the products during the transport or make them more durable. However, he also sees that people understand if they are provided with the right kind of information.

Another important direction of collaboration, especially regarding consumer education and awareness, is building a community around the brand. Veganz has a dedicated community, tracing back to its start as a vegan supermarket with a lot of support from the surrounding vegan community.

Möller exemplifies: "…they are also our toughest critics, of course. They say: 'your products are still packaged in plastic' or 'there's too much sugar in it, so what are you going to do about it?'" Veganz involves its community in the product design through focus groups and product testing, thus implementing input and building close ties. This closeness goes back to the beginnings of the brand as the first vegan supermarket and exists to this day. Building a community and educating consumers also includes mass media consumption. One example is a TV campaign with the message to "eat something for the climate"[13], which aims to inform consumers about the impacts of eating animal products (Veganz, 2021e).

Other partnerships involve cooperation with NGOs for campaigns to create awareness of particular topics such as plant-based diets or to identify possible areas of improvement. The company sponsors projects that are close to their mission, for example a sanctuary for farm animals. Furthermore, Veganz also cooperates with universities to conduct or support research.

Lastly, sustainability principles are reflected throughout the whole business model and company. The principles manifest in various benefits for employees, such as subsidizing public transport and bikes or providing a sustainable

[13] Iss mal was fürs Klima!

company pension plan. Other examples include using electric vehicles instead of short-haul flights for the sales team.

6.3.2.2.4 Value Capture and Recovery

Veganz defines its success as a company according to the CO_2 savings the company achieved through its products. Möller elaborates: "…we roughly know what the CO_2 impact of our globally sold pizzas is, we know the impact of a conventional pizza. Then we know how much we saved. And of course, we can calculate that across all our products." Möller asserts that this will not change when they go public, although he admits that following growth is one of their goals. However, Veganz mainly aims for growth in impact, which correlates to growth in sales in this case: "This means that the moment we increase distribution and go to other countries, we naturally have more sales of sustainable products. We have generated higher CO_2 savings and perhaps also created awareness among consumers. And at the same time, we have achieved our economic goals, which aim for growth for the time being." However, transitioning toward a climate-positive diet is the primary goal of Veganz and the benchmark for its success.

In pursuing this goal, the company captures value for its customers by providing low-threshold access to healthy vegan food. Veganz captures value for its partners by enabling them to become more sustainable and produce under socially and environmentally sound circumstances. It captures value for the environment through savings in the four categories of climate, water, animal welfare, and rainforest. Lastly, the company captures value for itself mainly through the sale of products.

Apart from capturing value, Veganz aims to recover value that otherwise would go to waste. Box 1 in section 4.1.1 and section 4.2.2.3.1 show the importance of reducing food waste. The company recognizes the problem and collaborates with partners such as Sirplus or food banks to donate food that cannot be sold

anymore but is still good. Another example is donating leftover proteins to sanctuaries for farm animals.

6.3.2.3 *Summary: Characteristics of the Business Model of Veganz*

Veganz clearly takes an *outside-in* perspective and aims to address mass consumption of animal products such as meat or diary. Offering vegan products in an easily accessible way directly addresses the underlying problem of meat consumption. The approach can be categorized as a modal shift, switching to a more sustainable consumption category (see 6.3.1). The company has a strong belief in its *purpose* of *transforming* the food system through climate-positive products and transparency, and the business model is aligned with this purpose. For this transformation, they *collaborate* with a variety of partners that share the same purpose, for example with Eaternity, the organization that measures the impact of their products. Transparently communicating the impacts of its products across the four categories of climate, water, animal-welfare, and rainforest is central to the business model. Openly communicating about areas of improvement ensures credibility and allows the company to effectively educate their customers about a climate-friendly diet. The loyal community Veganz established over the years functions as a multiplier and is essential for the success of an ideal-type business model of *consumer education and awareness*.

Veganz considers itself an agent of change that also supports its partners in becoming more sustainable. The company lobbies with competitors to change industry standards and make CO_2 impact labels mandatory. *Positive value creation* across all dimensions of environmental, social, and economic is the main goal of Veganz, reflecting in the understanding of success, which is mainly measured in CO_2 savings.

Veganz continuously aims to be more sustainable. Möller reflects on possibilities to further improve the business model of Veganz to be regenerative: “I would actually say that *conserving* is not yet well enough

developed, there is more opportunity in that area. I see it that way: saving is better than if I plant trees that will only take effect in ten or 15 years. That's greenwashing, too, climate neutrality. Because I continue to consume and then pretend that nothing is wrong." Overall, Veganz is a good example to illustrate how the ideal type of *consumer education and awareness* is applied to address unsustainable mass consumption. Out of the three cases in this thesis, Veganz is the most established company and proof that a TSBM can be profitable in the long run.

6.4 Addressing the Challenge of Disconnected Production and Consumption

The analysis in chapter 4.1.3.1 shows the myriad challenges arising from GVCs based on complex global labor division systems. This opacity and the geographic dispersion of production lead to a disconnect between producers and consumers.

This section introduces two ideal types of TSBMs that aim to address this challenge through transparency and collaboration. While both approaches depend on closer cooperation based on the principles of the characteristics of TSBMs, they take different approaches to close the disconnect between production and consumption. The first ideal type of *regional production and consumption* reduces the geographical distance between producers and consumers. The second ideal type of *direct trade* reconnects producers and consumers through transparency and by establishing new relationships between consumers and producers[14]

6.4.1 The Ideal Type of Regional Production and Consumption

In the Global North, many of our daily products are produced at some large-scale facilities and later distributed across a network of distribution systems.

[14] . New digital technologies such as the blockchain enable higher degrees of supply chain transparency and traceability, they are considered a technological rather than a business model innovation.

This happens mostly to take advantage of economies of scale (Larsson, 2018). A side effect of this development is the increasing difficulty of local, small-scale producers to compete, although they often produce more sustainably and cause less pollution.

Regional production and consumption systems build on the premise that smaller loops, both referring to the number of activities and geography, are more resource efficient and thus profitable (Larsson, 2018). It is easier to close the loop in such systems and to reconnect customers with their products. Sharma (2019) suggests that operating within a regional system rather than in GVCs facilitates staying within the carrying capacity of that ecosystem. On a global scale, a regional or local approach enables staying within the planetary boundaries while increasing human well-being (see also 5.2.2.1).

The close connection of regional systems and circular approaches becomes even more evident through examples of such systems. A prominent approach for those systems is industrial symbiosis, where outputs from one firm are used as inputs for another company in a circular manner (Chertow, 2008). In Denmark, the Kalondborg Symbiosis is the first project of its kind, consisting of six private entities like Novo Nordisk and three public organizations (Ellen MacArthur Foundation, 2021). The companies exchange 25 input and output streams like energy, water, and materials.

Regional production does not necessarily include a circular component. Local production and consumption systems are also popular in food and agriculture, for example community-supported agriculture. On a business model, the idea of aquaponics is an interesting example of a local food system. ECF Farmsystems produces tilapia and basil in a closed system directly in Berlin (ECF Farmsystems, 2021). The nutrients from the fish are used as a fertilizer for the basil, whose roots also clean the water for the fish. The products are sold directly at the factory and to local supermarkets. Furthermore, the company sells the aquaponic system, for example to supermarkets to set up on their roofs.

ECF is an excellent example for a company that combines regional value creation with a circular design.

Interviewee C points to the importance of retaining the value that is created locally: "… an important point for regionality is that the added value also takes place regionally, which promotes the social component of regionality." He stresses this aspect as especially important for the Global South: "… one of the reasons [why] we have a huge gap [between the Global North and South] is that we still produce in other areas than where consumption occurs." Studies also point toward the advantages of keeping capital local, thereby increasing the sustainability impact, especially for the local communities (Gallo et al., 2018; Stubbs, 2017). Joyce and Paquin (2016) emphasize the importance of paying attention to all communities in which a company is active, instead of just focusing on the region where it is headquartered or the region in which the company's products and services are sold.

One example that focuses on creating local value is the German chocolate manufacturer *fairafric*. While 70% of the global cocoa production takes place in Africa, only 1% of chocolate is manufactured there (fairafric, 2021). Fairafric decided to address this problem and build a chocolate factory in Ghana, where the company also sources its organic cocoa beans.

Business models in regional production and consumption systems show high potential as an ideal type of TSBMs as long as positive value is created, instead of relocating negative value or outsourcing negative impacts outside of the regional system. Approaches should use the characteristics of TSBMs developed in chapter 5 as guiding principles.

6.4.2 The Ideal Type of Direct Trade

The *direct trade* business model was pioneered by specialty coffee roasters such as *Stumptown Coffee Roasters* and *Intelligentsia Coffee*, or food companies such as *gebana* (gebana, 2021; Gerard, Lopez, & McCright, 2019; Meehan, 2007). Today it is especially popular with commodities such as coffee, cocoa, and other food

products. In a direct trade model, a company buys the item directly from the producers rather than through an intermediary, ensuring traceability and transparency in a formerly complex and opaque supply chain. Even a fair trade supply chain involves various actors and intermediaries, such as cooperatives that sell to exporters and then to roasters (Hindsley, McEvoy, & Morgan, 2020). Fairtrade certified cooperatives buy from many different smallholders and often mix their coffee or cocoa beans, which makes tracing the resources back to the farm almost impossible. Furthermore, the price in a fair-trade scheme is not tied to the quality of the products as it is fixed, which gives the farmers no incentive to produce high-quality commodities or improve with regards to sustainability.

The supply chain complexity is drastically reduced in a direct trade business model while enhancing traceability and transparency (Hindsley et al., 2020). Producers of the end product, such as coffee roasters, directly engage with the smallholder farmers. Both parties can agree on prices, and the margin that usually goes to the intermediary can be used to pay a better price to farmers and reduce costs for the coffee roasters at the same time. Interviewee C agrees: "By cutting out the middleman, you have less to pay within the chain, and then you can also share more of the profits." Through the close relationships, a knowledge transfer can be enabled, for example to educate the smallholders about more sustainable farming practices and achieving superior quality (Hindsley et al., 2020; Meehan, 2007). Therefore, the relationships in a direct trade model are mutually beneficial; they empower the farming communities, educate them in socially and environmentally sustainable production methods and help improve the quality of the commodities (Hindsley et al., 2020). Interviewee C adds: "As a producer, I have control over my supply chain, so that I can eliminate the risks but also ensure the quality."

Studies identified several benefits of a direct trade model: 1) *Producer premium*: the smallholders are paid a fair price for their products, often significantly exceeding even fair-trade prices. 2) *Environmental*: through the education of the farmers, production methods are improved to be environmentally sustainable. 3) *Social*: the smallholders have access to training, technologies, and a network

built around the direct trade model. 4) *Quality*: the direct relationship, education on farming methods and the single origin can lead to a significantly better quality of the end product, for example coffee or chocolate. 5) *Control*: the producers of the end product, for example roasters, have greater control over the production processes and outcomes, ensuring they match their company values (Gerard et al., 2019; Hindsley et al., 2020; Middendorp, Boever, Rueda, & Lambin, 2020).

Unlike third-party labels such as fair trade, Utz, or RSPO certification, direct trade does not have a set of defined standards (Gerard et al., 2019). Furthermore, in contrast to those certifications where the label provider is accountable, a firm with a direct trade model is responsible for ensuring the standards are met. This also saves the significant licensing fees, for example for a fair trade certification of the products (Macatonia, 2013). However, direct trade is a different approach rather than just another label or standard, and the lack of general principles also opens up space for possible misuse and free riders (Gerard et al., 2019; Macatonia, 2013).

Direct trade models are especially popular in the coffee and chocolate industry. Companies such as Direct Coffee or Choba Choba successfully source their cocoa or coffee beans directly from the producers while creating positive environmental value through sustainable agriculture and social value through fair prices and working conditions. Another example is Conflictfood, which sources produce such as Safran directly from farmers in conflict regions like Afghanistan (Conflictfood, 2021). The company wants to show that those regions have more to offer than war and conflict and tell the stories of the local people by selling their high-quality products.

A direct trade business model can be an *ideal type of TSBMs* when a one-way transaction is transformed into a two-way, mutually beneficial relationship. This relationship needs to create positive value for the common good. By ensuring traceability and transparency in the value chain while creating positive

value for all actors involved, a direct trade model has the potential to reconnect producers and consumers.

6.4.3 Case: Crowd Container[15]

> *Thanks to the enjoyment and appreciation of food, we create prospects for innovative producers and enable diverse, climate-positive agriculture worldwide.*
>
> Vision Crowd Container (Crowd Container, 2021)

Crowd Container is a Swiss-based start-up that follows a direct trade approach as described in the previous section. The start-up imports products sourced directly from the producers, such as spices from Kerala in India, tomato puree and olive oil from Sicily, coffee from Peru, or fresh fruit and vegetables from local farmers in Switzerland.

This section first briefly describes the story and motivation to found the company before illustrating the business model of Crowd Container. Lastly, the characteristics of Crowd Container's business model are examined. This part also explains how the business model helps to reconnect producers and consumers.

6.4.3.1 *The Story and Motivation behind Crowd Container*

Crowd Container founder Tobias Joos worked in food wholesale, dealing with organically and fair-trade certified products. However, he realized how difficult it was for smallholder producers of diverse and sustainable products to sell into this highly standardized system based on scale. During this work, he met many small-scale producers and wondered: "I saw that there is sustainable production, but that [the products] had bad cards on the market. And I asked myself why that is. I thought, starting from myself, the products taste better, and the story behind them is also better than just the label story. Why can't something like that be sold?"

[15] Unless otherwise indicated, the information in this case is taken from the interview with Tobias Joos, founder of Crowd Container.

He visited a small agro-forest in Kerala, India, where various commodities, from different spices to cashew nuts or coconuts, grow next to each other in a jungle-like food forest. This approach of homestead farming has a long tradition in this region and is also beneficial for nature. Only a way to market those products was missing. "I wondered if there is a way to bring the value that they create with these sustainable production systems and also very, very high-quality food to the customer." So, in 2016, he organized a crowdfunding campaign to fill a container with these products and ship them to Switzerland. This is how the name Crowd Container came about. Today, the organization consists of a corporation as well as an association that both share the same purpose: changing the food system. Selling high-quality, sustainable products directly from the source is still the motivation of Crowd Container: "That's still my motivation to try to solve that somehow. Because I think it is not solved in the existing distribution system."

6.4.3.2 *Analyzing the Business Model of Crowd Container*

The upcoming section briefly describes the business model of Crowd Container, starting with the sustainability challenges it addresses, how this challenge is integrated into the value proposition, and which value the business model aims to create for whom. The following section illustrates how this value is created and delivered, focusing on positive value creation, closing with an overview of how the company defines success, which value it captures for whom, and how Crowd Container contributes to the sustainability challenge it aims to address.

6.4.3.2.1 The Challenge of Selling Diverse Smallholder Products

Today's food supply chains and distribution systems are highly standardized and aim to produce large amounts of food (Gaitán-Cremaschi et al., 2019). Producers that want to sell into this system need to provide a certain amount of produce in a specific, uniform quality at a competitive, low price. Those incentives lead to cultivation methods that rely on monoculture and industrialization. Out of 6000 crop species cultivated for food, just 200 are

currently used, and only nine of them make up for 66% of production (FAO, 2019b). The diversity of wild food species is constantly declining, although monocultures are less resilient to the effects of climate change, more vulnerable to diseases or crop failures, cause higher nitrogen pollution, and degrade the soil (FAO, 2019b; Sunderland et al., 2019). However, the problem does not stop there. Agriculture accounts for around 80% of global deforestation, most notably cattle farming, soy, or palm oil (FAO, 2019a; Sunderland et al., 2019).

Other forms of agriculture do not fit into this distribution system, although they might be more sustainable and yield higher earnings in the long run. Crowd Container relies on nature-positive food production through traditional homestead farming, permaculture, and food forests. Mixed forests are stable ecosystems with many benefits, such as healthy soil, prevention of erosion, binding carbon, and efficient water usage. Food forests build on the principles of permaculture and natural forest ecosystems. Joos elaborates: "An edible forest is an imitation of a forest with crops that can be harvested. The yields are higher than in a monoculture, you need fewer resources, but it requires more work."

6.4.3.2.2 Value Proposition

In a TSBM, the value proposition is the vehicle to integrate the contribution toward solving a sustainability challenge into the business model. "We all share a vision, and for me, the business model is how we get there," Joos explains. The whole business model is aligned to this vision to enable diverse, climate-positive agriculture. Joos continues by asking: "'What can we do to get there?' And everything that deviates, that does not point in the direction of the vision, would no longer fit this company. We filter everything again and again through the perspective of our vision and ask ourselves, 'Are we working with it in this direction or not?' And if not, then it's not a good idea."

Furthermore, the value proposition also describes which value should be created for whom. Crowd Container wants to give *consumers* access to high-

quality, healthy food. Next to this tangible value, they also want to spread the producers' stories, which help increase the appreciation for their work and produce with consumers. The prices and the margins for each stakeholder are communicated transparently. Being open about products' origins and where customers' money goes increases their willingness to pay and is crucial to the value proposition.

For the *producers*, Crowd Container wants to create value by paying them a cost-covering, appropriate income. Traditional structures that work based on global market prices and even fair-trade schemes are often not enough to make a decent living (Macatonia, 2013). Paying reasonable prices also leads to a cascade of creating positive value. A functioning market mechanism to sell such products shows that a regenerative, sustainable food production system is economically possible and viable. Those production systems create value for the *environment,* for example through lower CO_2 emissions, by fostering greater biodiversity, healthy soil, or generating less water use than conventional production methods.

6.4.3.2.3 Value Creation and Delivery

When determining how positive value can be created or enhanced, Crowd Container uses footprint analysis to identify the biggest possible impact in the value chain. For food, the most significant lever lies in the production and consumption phase, which is the focus of the company's business model. The value creation and delivery are based on close collaboration with producers that share the same purpose and apply sustainable, regenerative production methods. When selecting the producers, the company does not focus on label certification or a one-size-fits-all solution. Instead, the producers need to apply a holistic, ecological approach tailored to the local circumstances and use as few resources as possible. The resulting cooperation is mutually beneficial, and the producers are actively engaged in a co-creation process. Joss explains: "young producers say yes, well, if that works, then next year I could also include this species in the crop rotation and then try a mixed crop and so on."

A guaranteed purchaser also enables the producers to plan long term and invest in new projects. For example, in Sicily, an edible forest was developed through the initiative of the local producers. This forest consists of citrus-, pomegranate-, or almond trees, asparagus is grown under the trees, and unused spaces are used to grow wheat. Through their association, Crowd Container facilitates knowledge exchange both between consumers and producers and between the producers in the different regions the company is active in. The critical role for Crowd Container in the value creation phase is to communicate the added value and the difference from conventional agriculture to the consumer.

6.4.3.2.4 Value Capture and Recovery

Joos admits to the challenge of balancing profit and impact: "The big challenge is to make something impact-oriented and still be commercially successful at the same time, isn't it? But that is precisely the challenge that is driving us founders." However, Crowd Container does not judge its success purely in financial terms. Success for them means that the producers can live off the prices they get for their products. From an ecological perspective, they aim to measure their positive and negative environmental impacts to compare them to conventional products. The company has already managed to measure those impacts, such as CO_2 footprints for their coffee, and aims to do the same for all of its products. Joos sums up the understanding of success as follows: "Success for us is when, thanks to our distribution channel, an extensive area can be farmed regeneratively or agroecologically. And success means that all the stakeholders involved can make a good living with what they do, including us, of course."

Through the platform, 132 tons of food have been sold to this date (Crowd Container, 2021). Crowd Container pays approximately 2.7 times the global market price for those products, and even those higher prices are just about cost-covering. Joos explains: "Truly sustainable, holistic agriculture, which does not focus solely on CO_2 emissions, for example, is massively underpaid. And we are changing that." The farmers themselves set the prices and determine how much

they need to earn to cover their costs, independently from the global market price (Vonwyl, 2020).

Crowd Container sourced from 51 hectares of diverse, climate-positive agriculture, aiming to double this space every year (Crowd Container, 2021). Furthermore, they have a community of over 100 active members in the association, organize events and engage with the producers. Crowd Container also aims to sensibilize the wide public on topics of SPC.

6.4.3.3 *Summary: Characteristics of the Business Model of Crowd Container*

The ambition to create societal value and address sustainability was at the beginning of Crowd Container's story, reflecting an *outside-in* perspective. This *purpose-orientation* and the clear goal to create value for a variety of stakeholders is at the core of the company. Joos emphasizes: "… for me, entrepreneurship without this focus on a solution where I feel the world needs it is unthinkable."

Close *collaboration* with its producers and community is another essential ingredient of the business model from Crowd Container. Fair prices for the producers, sustainable cultivation methods, and high-quality ingredients create *positive value* for the company, its customers, stakeholders, and the environment. The producers use principles of regenerative agriculture, emphasizing the *conserving* characteristic of Crowd Container's business model.

Demonstrating that there is a business case and market solution for products that are fairly and sustainably produced is a strong motivation for Joos. With this demonstration, he aims to create momentum for t*ransforming* the current food system. Another lever for this transformation is community engagement and knowledge transfer within this community to scale up solutions such as the edible forest project in Sicily.

Although Crowd Container mainly applies the ideal type of direct trade, consumer education and awareness also play an important role. The company illustrates the ideal type of a direct trade model and shows how the disconnect

between producers and consumers can be bridged through transparency and mutually beneficial partnerships.

7 Conclusion

This last chapter consists of five parts. Section 7.1 summarizes the research findings and elaborates how those findings answer the research questions. Section 7.2 discusses the results, contextualizes them within the existing literature, and shows how they extend the current level of knowledge. Section 7.3 discusses the theoretical implications and how this thesis answers various calls from research. Furthermore, section 7.3 elaborates on the practical implications and how the findings are beneficial for practitioners. Section 7.4 describes the limitations of this thesis and derives possible avenues for future research. Closing remarks in section 7.5 complete the dissertation.

7.1 Summary of Research Findings

This section summarizes the research findings and demonstrates how the findings answer the research questions posed in chapter 1.

The purpose of this thesis is twofold. First, the dissertation aims to extend the concept of TBST by Dyllick and Muff (2016) to the context of business models and demonstrate what such a TSBM that effectively contributes to sustainable development looks like. Second, the thesis aims to provide guidance to businesses on how to effectively address sustainability challenges through their business model. In this purpose, the research was guided by the overarching question of *what truly sustainable business models that effectively contribute to solving sustainability challenges look like*.

The findings to answer this question are structured into three chapters: chapter 4 discusses challenges and opportunities of SPC, chapter 5 conceptualizes a TSBM, and chapter 6 illustrates the findings through ideal types of TSBM as well as three real-life cases.

7.1.1 Sustainable Production and Consumption

Chapter 4 discusses three important challenges of SPC: excessive resource use, mass consumption patterns, and a disconnect between production and consumption. As a starting point, this thesis establishes what an outside-in perspective looks like for businesses models. However, it goes much further than that, as throughout the dissertation, this very perspective is adopted. The research itself starts by looking at sustainability challenges and investigates opportunities and business solutions to solve them.

The Earth's ability to sufficiently regenerate and replenish the resources we extract is threatened by the implications of our linear production system. At the same time, mass consumption patterns and a growing demand for products lead to ever more production. Companies need to educate consumers and support them in making more sustainable choices, recognizing a shared responsibility for sustainable consumption between themselves and consumers. Due to the complexity and opacity of GVCs, it is difficult for companies and even more so for consumers to trace the impacts of their consumption. Negative impacts are often outsourced within the value chain, especially to the Global South.

One example for each challenge illustrates the difficulties of SPC and breaks the abstract challenges down to a concrete context, making them more tangible. Food waste explicates the difficulties of excessive resource use, (ultra) fast fashion contextualizes mass consumption patterns, and the cocoa value chain serves as an example for the problems arising from a disconnect between production and consumption. The first part of chapter 4 closes by showing that changes in the political, economic, and social framework, such as new regulations, population growth, or changes in consumer behavior, significantly affect the transition toward SPC.

Part of adopting an outside-in perspective is regarding sustainability challenges as business opportunities. Therefore, the next part of chapter 4 changes the point of view and identifies business opportunities that arise out of solving the

previously identified challenges of SPC. With regards to economic value, some of the most significant opportunities for business arise out of the reduction of food waste, the provision of affordable housing, or the implementation of circular business models. Regarding challenges as opportunities requires a new mindset and a new type of business models.

7.1.2 Characteristics of Truly Sustainable Business Models

After setting the context and deriving selected opportunities for businesses in SPC, chapter 5 goes on to answer the first research question: *How can a truly sustainable business model be conceptualized?*

As a first step in conceptualizing a TSBM, the differences to an SBM need to be highlighted. The elements of a TSBM reflect the new view on business sustainability across the *company perspective*, *value creation and company purpose*, and *measure of success* that was called for in chapter 2.2. Therefore, a TSBM explicitly integrates solving sustainability challenges, which become an element of the TSBM. The other business model elements are the same for SBMs and TSBMs, however, their focus and perspective and the questions they raise are different[16]. Dyllick and Muff (2016, p. 165) state that "a truly sustainable business reflects on questions that go beyond those so far considered". For example, the value capture and recovery of an SBM asks: *How does the company make money, and how is economic, social, and environmental value captured and recovered by the company and its stakeholder*s? A TSBM, however, asks: *Does the business model contribute to effectively addressing a sustainability challenge?* And: *Which value is realized and/or recovered for the company, its stakeholders, the environment, and society?*

Next, the six characteristics of TSBMs are introduced:

> A TSBM is *collaborative*, which means that it puts an emphasis on collaboration and considers a wide range of stakeholders in its business

[16] See table 4, p. 125 for a comprehensive overview of the questions and differences.

decisions. The whole value network it exists in is sustainable as well, consisting of a network of partners that share the same purpose and values. Those sustainability efforts are transparently and honestly communicated to the stakeholders.

A TSBM is *conserving*. It recognizes the boundaries of the planet and society, representing absolute limits of the ecosystem which cannot be surpassed and minimal thresholds of society for human well-being. Instead of compensating for negative impacts, a TSBM regenerates from harmful activities.

A TSBM is *contributive*, focusing on creating positive environmental, social, and economic value for the common good. It is built to endure, which means it is financially viable and stable in the long run.

The characteristics of *outside-in* mean that sustainability challenges serve as the motivator and starting point for business actions and decisions. A TSBM recognizes the interconnectedness of business, society, and environment and consequently measures and considers its impacts on environment and society.

A TSBM is *purpose-driven*. Solving sustainability challenges is the main purpose of the business model and integrated into its core. Consequently, sustainability rather than profitability is considered first in business decisions, as long as financial viability is ensured. This also leads to a redefinition of success as being a contribution to sustainable development rather than profit. In its quest for sustainability, the company adopts a long-term horizon in business planning, while continuously aiming to improve with regards to sustainability. Finally, rather than aiming to sell as many products as possible and creating ever more demand, a TSBM focuses on fulfilling a need.

Lastly, a TSBM is *transformative*. It actively engages in changing the rules of the game, thinking *from* and *for* the future. It takes on a leading role in a transition toward a sustainable economic system, understanding itself

as a lobbyist for change. In this transformation, a TSBM engages on different levels, from individual to value network, to industry, and to policy. Most of all, it encourages its customers to consume responsibly and creates awareness for important sustainability issues.

Answering research question 1, I define the following: A TSBM takes **sustainability challenges as a starting point** to develop business solutions to solve those challenges. In doing so, it takes on a **systemic perspective** and respects the **boundaries** of the planet and society. A TSBM jointly creates **positive value for the common good** and the company, within and for its **value network** of like-minded **partners** who share the same goal and **purpose** of effectively **contributing to sustainable development**. It takes on a **future-oriented perspective** of a sustainable society and planet, and actively and collaboratively engages in transforming the current economic system toward this **ideal state**.

7.1.3 Ideal Types of Truly Sustainable Business Models

Finally, chapter 6 aims to address the second research question: *What are ideal types of truly sustainable business models for sustainable production and consumption?*

Taking the three identified challenges of SPC from chapter 4 as a starting point, enablers and ideal types of TSBMs are identified. Ideal types are context-dependent, as a TSBM's potential to contribute toward sustainable development depends on the individual setting. Therefore, conditions under which the ideal types are truly sustainable are outlined for each approach. Ideal types are in opposition to the concept of business model patterns, which are universal, context-independent constructs.

Ideal types that lead to a *responsible resource use and regeneration* are situated in the realm of circularity. B2B sharing, product-service systems, and a short view on closed-loop models exemplify concrete ideal types. However, to be truly sustainable, circular models need to incorporate principles of regenerative businesses, a concept that is now emerging in the business world (see 7.4). The

start-up *Oxara* serves as an example for a circular model. The company produces earth-based cement directly from the excavation material of the building sites, which is 90% more efficient than conventional cement with regards to costs and CO_2 emissions. Consequently, they aim to address the challenges of resource-intensive production of conventional cement, as well as affordable housing, especially in Africa.

Ideal types that *change consumption patterns* to be truly sustainable are based on the concept of sufficiency. The ideal types consumer awareness and education as well as collaborative consumption illustrate ways to transform mass consumption patterns. Those approaches can only be truly sustainable if they rely on sharing existing resources instead of incentivizing more consumption. Furthermore, positive societal value can be created by enabling access to essential products or services for people that had no access before. The vegan food producer *Veganz* serves as an example of a company that actively aims to transform current consumption patterns. By radically disclosing the impact of their products with regards to climate, water, rainforest, and animal welfare, they aim to create awareness for a climate-friendly diet and address the problem of mass consumption of animal products.

Ideal types that *reconnect production and consumption* are based on transparency of the supply chain and creating new forms of mutually beneficial collaboration between producers and consumers. Regional production and consumption systems and direct trade models serve as examples for this ideal type. Those approaches can be ideal types of TSBMs if they enable mutually beneficial relationships, create positive value within the regional system by bringing producers and consumers closer together, or create radical transparency within the value chain. Swiss-based company *Crowd Container* serves as an example of a company that reconnects producers with consumers by directly selling from the producers. Thus, they create transparency with regards to the origin of the product and create mutually beneficial relationships by paying livable prices to the producers and supporting them to produce more sustainably.

The overarching research question of *what truly sustainable business models that effectively contribute to solving sustainability challenges look like* has been answered on two levels. First, on a more abstract level, elements and characteristics of a TSBM provide insight into what a business model that effectively addresses sustainability challenges looks like. Second, on a more tangible, context-based level, the ideal types of TSBM as well as the cases provide an illustration of what such a business model could look like in practice.

7.2 Discussion

This section relates the findings from this dissertation to previous work, shows how it fits into existing insights and how it extends the knowledge.

The seminal paper by Dyllick and Muff (2016) and their call for "approaches that effectively link both levels" (p.58) of business and macro-level sustainability challenges served as a starting point and motivation for this thesis. This thesis proposes TSBM as such a link and expands the concept of TBST to the realm of business models. A TSBM also builds on the two main assumptions of TBST: a focus on positive value creation for the common good as well as the adoption of an outside-in perspective that takes sustainability as a starting point for business solutions. The findings from this thesis add further valuable points to the discussion on the incorporation of sustainability challenges. For example, a TSBM should not create additional problems with its activities, but rather address root causes of the challenges, a successful TSBM effectively solves a sustainability challenge and therefore becomes obsolete in the long run, and it sees the outside-in perspective as a motivation to act. Furthermore, this thesis transfers the notion to create positive value instead of reducing negative value to various contexts and ideal types, such as the need for regenerative instead of "merely" circular business models.

Dyllick and Muff (2017) develop organizational characteristics of truly sustainable businesses. Aspects like an emphasis on engagement and the primary focus on society and the planet are part of the characteristics of TSBMs

as well as truly sustainable businesses. However, the characteristics that are only relevant for business models show the importance of adapting and extending TBST to specific concepts.

Bereuther (2021) transfers TBST to the context of strategy, developing TSS. She identifies innovating business models as the TSS that yields the highest potential value for business as well as society. This thesis specifies what such an innovative business model has to look like and therefore makes a valuable contribution to the conversation on TSS. The close connection and partial overlap between the concepts of strategy and business models (see 2.3.4) is further stressed by comparing the characteristics of TSS with the characteristics of TSBM. Bereuther (2021) identifies seven characteristics of TSS across three categories. Input and output parameters cover the characteristics of *challenges relevant to society are addressed*, *positive societal value is created*, and *system-wide changes are initiated*. Those characteristics are reflected in the TSBM characteristics of *outside-in*, *contributive*, and *transformative*. The category of process parameter covers the TSS characteristics of *sustainability is fully integrated into the core of the business*, *activities are impact-oriented and proactive*, and *radical innovations are triggered*. The integration of sustainability at the core of the business is a crucial aspect of the TSBM characteristic purpose-driven, while triggering radical innovations loosely connects to *transformative* and impact-oriented activities to *contributive*. Finally, Bereuther (2021) identifies *different forms of collaborations are used* as a cross-cutting issue, mirrored in the TSBM characteristic of *collaborative*. This short elaboration shows that while some of the characteristics at least partially overlap, the business model characteristics also reflect the different emphasis of the concept, for example the focus of business models on the value network. Therefore, TSBMs represent a valuable addition to strategic tools in the context of TBST.

Furthermore, this dissertation connects to other points made by various authors. Moratis and Melissen (2020) call, amongst other things, for an integration of consumer behavior into the considerations around TBST. This thesis picks up this demand and illustrates how a TSBM should actively engage

consumers toward sustainable consumption behavior. Caviezel (2018) stresses the importance of integrating sustainability at the core of the business, a finding that is reflected in the TSBM characteristic of *purpose-driven*. Dyllick and Rost (2017) conceptualize truly sustainable products, which focus on the positive impacts of consumption rather than minimizing negative effects, a finding mirrored in the characteristic of *conserving*.

Within the SBM literature, this thesis builds on efforts to conceptualize an SBM (Morioka, Bolis, Evans, & Carvalho, 2018; Stubbs & Cocklin, 2008). However, previous studies relied on a small sample of case studies, where this study builds on a comprehensive analysis of the literature and expert interviews, responding to calls for a sound conceptualization of SBMs (Dentchev et al., 2018; Rauter, Zimek, Baumgartner, & Schöggl, 2019). Furthermore, a TSBM connects business actions with sustainability challenges on a company level, which has been missing from the SBM literature so far. This connection is also a valuable insight for the discussion around SBM patterns, where the disconnect of micro and macro level has not been addressed. Additionally, this dissertation also connects to the conversation on patterns by providing a context-dependent equivalent, which can also serve as inspiration and guidance for sustainable business model innovation.

7.3 Contributions

This section presents the theoretical and practical contributions of this thesis, responding to the research needs identified in chapter 1 as well as the starting points and motivations derived from practice.

7.3.1 Theoretical Contributions

The theoretical contributions reflect the research needs 1) to 4) previously raised in chapter 1.

1) A new view on business sustainability: for a closer integration of businesses and society that is necessary to bridge the big disconnect, a new view on

business sustainability is necessary (Dyllick & Muff, 2016). For business models, this new view has to happen in three dimensions. First, a different perspective on sustainability and a new understanding of company purpose are reflected in a reconceptualization of the value proposition of TSBMs. Second, a new understanding of value creation influences the understanding of the element of value creation and delivery. Third, a new understanding of company success builds the foundation of the value capture and recovery of a TSBM. Dyllick and Muff (2016, p. 169) express the hope to spark a "discussion on the meaning and types of BST". With contextualizing this new view on sustainability within the elements of the business model, this thesis joins this discussion.

2) The need for a coherent conceptualization of SBMs: the second research need identified in chapter 1 evolves out of the call for a comprehensive conceptualization of an SBM (Dentchev et al., 2018; Rauter et al., 2019). One of the main contributions to the conversation on SBMs is the conceptualization of TSBMs through an extensive literature review, refined by expert interviews.

3) A necessary integration of the outside-in perspective into business models: Dyllick and Muff (2016) call for "approaches that effectively link both levels" of business-level with macro-level sustainability (p. 158). The TSBM is a tool for such a link and its conceptualization provides insights into how the big disconnect can be overcome. This thesis extends the TBST to the realm of business models and adds to the theoretical understanding of TSBMs.

4) The need to establish a context-dependent ideal type instead of a context-independent pattern for TSBM: the quest of identifying patterns of SBMs similar to those that have been established for traditional business models (Gassmann, Frankenberger, & Csik, 2017) is quite popular. However, the potential to effectively contribute toward a sustainability challenge varies by context (Dyllick & Muff, 2016). This thesis proposes ideal types of TSBMs as a context-dependent equivalent to sustainable business model patterns that can serve a similar purpose of inspiring and guiding change.

7.3.2 Practical Contributions

Providing practical contributions and recommendations next to theoretical ones is a cornerstone of applied science. The practical contributions of this theses connect to the demand articulated by the Club of Rome to develop solutions that are tailored to and respect specific contexts, and the call by George, Howard-Grenville, Joshi, and Tihanyi (2016) to provide management solutions to sustainability challenges. Similarly, chapter 1 raises the research need:

5) To offer possible, concrete approaches to how companies can address sustainability challenges caused by unsustainable production and consumption: chapter 2 depicts the special importance of SPC for businesses, to contribute to sustainable development. Therefore, it was chosen as a context to illustrate concrete business models that effectively contribute toward solving sustainability challenges.

This thesis offers implications for practice on various levels. For companies, the findings of this thesis provide abstract as well as more concrete and tangible guidance to address sustainability challenges through their business model. Although the characteristics of a TSBM are ambitious, they can be used as inspiration, but also as a benchmark to identify possible areas for improvement or identify strengths of the current business model. The usefulness of this framework has already been proven in the case studies and can be further investigated in future research.

Similarly, the business opportunities that evolve out of addressing challenges of SPC as introduced in chapter 4.2 can serve as a starting point for businesses to identify possible approaches within the scope of their activities. The ideal types of TSBMs provide further guidance for the scope of the three challenges of SPC they aim to address: excessive resource use, mass consumption patterns, and a disconnect between production and consumption.

On a more concrete level, the questions raised by TSBMs can be used by managers as guidance to analyze and develop a TSBM (see appendix IIIb, slide 2). The application for the case studies demonstrated their suitability to analyze

a company's business model and reflect on whether it qualifies as truly sustainable. In combination with the characteristics of a TSBM and the truly sustainable business model petal to be used as a North Star, the two frameworks provide a powerful tool to support companies and managers in their journeys toward SPC. Finally, the cases aim to encourage managers to embark on their own journey toward a TSBM by demonstrating that sustainability and business are not contradictory but go hand in hand.

Policy makers can address the barriers for SPC identified in chapter 4 by designing the right regulations and creating incentives for SPC by emphasizing the positive reinforcements. For example, they can support a restrictive supply chain law, advocate for the internalization of externalities such as GHG emissions into prices or push for mandatory labelling and disclosure of environmental and social impacts on products. Finally, consumers can use the information in this thesis to make informed consumption choices and support companies that already push toward a transition of our current production and consumption system.

7.4 Limitations and Further Research

This section addresses limitations of the dissertation and connects them to future research opportunities.

The research is subject to three main limitations. First, the focus of this thesis is to show how sustainability is integrated into a business, what the adoption of an outside-in perspective means for the business model of a company, i.e. what a TSBM looks like. The "how" of value creation, i.e. operational aspects of a TSBM, and the mechanics and inner workings of the value capture, e.g. reporting or revenue and value-capture models, although discussed are not the main focus of this thesis. Similarly, the thesis does not cover aspects of innovation, such as facilitators or barriers of truly sustainable business model innovation. However, this limitation also presents opportunities for future research. Further studies could research the best ways to develop, innovate, and

implement TSBMs. Developing a canvas or design tool was not a goal of this thesis. However, the guiding questions that were already applied in the cases could be further developed (see appendix IIIb, slide 2). A potential design tool based on the guiding questions as well as the truly sustainable business model petal sparked a lot of interest with the experts, and they could be further tested and developed into a sophisticated tool to analyze and develop a TSBM.

Second, in this thesis the ideal types of TSBMs serve an illustrating purpose and do not represent a comprehensive overview of all possible ideal types within SPC. To limit the scope of this thesis, other challenges, such as underconsumption and access to resources that satisfy basic human needs were not considered. However, future research could investigate ideal types for those challenges, or analyze different industries such as mobility or energy that are undoubtedly crucial for transforming sustainable business models but were not part of this dissertation.

Third, three cases shed light on companies in different phases of the corporate lifecycle: one is only starting out, one is preparing for going public and established in the market, one is somewhere in the middle. The case study section does not include for example a big, established corporation. Studying established corporations in future research can provide insights on long-term profitability of TSBMs. Further and more detailed case studies could also broaden the focus and look at a wide variety of different companies in a wide variety of contexts to further investigate how the ideal types and ideal characteristics transfer to a real-life context. While some characteristics, such as collaborative, are well researched, others, for example outside-in are less represented in literature. Further case studies could help to uncover more insights on less researched characteristics.

7.5 The Road Ahead

Court orders Royal Dutch Shell to cut carbon emissions by 45% by 2030

The Guardian, May 26, 2021 (Boffey, 2021, para. 1)

Caged animal farming: EU aims to end practice by 2027

BBC News, June 30, 2021 (BBC News, 2021, para. 1)

I am writing these words in the wake of a number of devastating events. The world is still recovering from the aftermath of the COVID-19 pandemic, while the effects of an even bigger crisis – the climate crisis – become more and more visible. My nephew was born in 2012, my niece in 2014. Both have never experienced a day in their lives where climate change did not affect the weather (Sippel, Meinshausen, Fischer, Székely, & Knutti, 2020). While an unprecedented heat wave hit Canada and the Pacific Northwest, parts of Europe were confronted with serious flooding.

It is quite easy to focus on those negative developments. However, this thesis aims to set a different tone and demonstrate constructive solutions to sustainability challenges, "view[ing] sustainability as an aspirational future world transformed by the Sustainable Development Goals" (Whyte & Lamberton, 2020, p. 3). Many companies already share this vision of a sustainable future and a sustainable production and consumption system, and act upon it. The companies Oxara, Veganz, and Crowd Container are representatives of this growing movement. Of course, not all challenges can be solved through business solutions alone. But businesses are also not the only actors involved. A shared responsibility of all actors, of governments, lobbyists, businesses, NGOs, consumers, and many more can free up innovative, radical ideas and create the necessary momentum for change.

Finally, I want to close with a statement by Interviewee K: "Outside-in is about taking something other than the company as a starting point; it is about the motivation to act." My personal motivation to write this thesis was to make a small contribution to a more sustainable world. I hope the findings of this thesis speak to business leaders, policy makers, and other change agents and inspire and guide them on their journey toward truly sustainable business models.

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Appendix

Appendix I: Integrative Literature Review

a. Overview of Papers with High Relevance for Integrative Literature Review

#	Author(s)	Year	Title
1	Aagard, A.	2019	Identifying Sustainable Business Models Through Sustainable Value Creation
2	Baue, B., & Thurm, R.	2018	Blueprint 4: New Business Models. Integral Business Model Design for Catalyzing Regenerative & Distributive Economies.
3	Bocken, N.	Forthcoming	Sustainable Business Models
4	Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S.	2014	A literature and practice review to develop sustainable business model archetypes.
5	Boons, F., & Lüdeke-Freund, F.	2013	Business models for sustainable innovation: state-of-the-art and steps towards a research agenda.
6	Bradley, P., Parry, G., & O'Regan, N.	2020	A framework to explore the functioning and sustainability of business models
7	Brehmer, M., Podoynitsyna, K., & Langerak, F.	2018	Sustainable business models as boundary-spanning systems of value transfers
8	Clinton, L., & Whisnant, R.	2014	Model Behavior: 20 Business Model Innovations for Sustainability.
9	Dentchev, N., Rauter, R., Jóhannsdóttir, L., Snihur, Y., Rosano, M., Baumgartner, R., … Jonker, J.	2018	Embracing the variety of sustainable business models: A prolific field of research and a future research agenda.
10	Dyllick T, Muff K.	2016	Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability
11	Dyllick T, Muff K.	2017	What does sustainability for business really mean? And when is a business truly sustainable?
12	Dyllick T, Rost Z.	2017	Towards true product sustainability

13	Elkington, J., Lim, J., & Smith, L.	2016	Breakthrough Business Models: Exponentially more Social, Lean, Integrated and Circular.
14	Evans, S., Vladimirova, D., Holgado, M., Van Fossen, K., Yang, M., Silva, E. A., & Barlow, C. Y.	2017	Business Model Innovation for Sustainability: Towards a Unified Perspective for Creation of Sustainable Business Models
15	Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S.	2019	A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability.
16	Gallo, P. J., Antolin-Lopez, R., & Montiel, I.	2018	Associative Sustainable Business Models: Cases in the bean-to-bar chocolate industry.
17	Jonker, J., & Faber, N.	2019	Business Models for Multiple Value Creation: Exploring Strategic Changes in Organisations Enabling to Address Societal Challenges
18	Joyce, A., & Paquin, R. L.	2016	The triple layered business model canvas: A tool to design more sustainable business models.
19	Kennedy, S., & Bocken, N.	2019	Innovating Business Models for Sustainability: An Essential Practice for Responsible Managers
20	Laasch, O.	2017	Beyond the purely commercial business model: Organizational value logics and the heterogeneity of sustainability business models.
21	Loetscher S, Kreis L.	2018	Business Model Innovation for Sustainability. A Whitepaper by WWF Switzerland and Impact Hub Zürich.
22	Lozano, R.	2018	Sustainable business models: Providing a more holistic perspective.
23	Lüdeke- Freund, F., Massa, L., Bocken, N., Brent, A., & Musango, J.	2016	Business Models for Shared Value.
24	Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H.	2018	The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation.
25	Lüdeke-Freund, F., Froese, T., & Schaltegger, S.	2019	The role of business models for sustainable consumption: A pattern approach

26	Moratis L, Melissen F.	2020	Reflections on 'True' Business Sustainability: Challenging Definitions, Recognizing Couplings and Developing Intelligence
27	Morioka, S. N., Bolis, I., & Carvalho, M. M. de.	2018	rom an ideal dream towards reality analysis: Proposing Sustainable Value Exchange Matrix (SVEM) from systematic literature review on sustainable business models and face validation.
28	Morioka, S. N., Bolis, I., Evans, S., & Carvalho, M. M.	2018	Transforming sustainability challenges into competitive advantage: Multiple case studies kaleidoscope converging into sustainable business models.
29	Nosratabadi, S., Mosavi, A., Shamshirband, S., Zavadskas, E. K., Rakotonirainy, A., & Chau, K. W.	2019	Sustainable business models: A review.
30	Pedersen, E. R. G., Lüdeke-Freund, F., Henriques, I., & Seitanidi, M. M	2020	Toward Collaborative Cross-Sector Business Models for Sustainability
31	Randles, S., & Laasch, O.	2016	Theorising the Normative Business Model.
32	Rauter, R., Zimek, M., Baumgartner, R. J., & Schöggl, J.-P.	2019	Assessing the Impact of Sustainable Business Models: Challenges, Key Issues and Future Research Opportunities
33	Schneider, S., & Clauß, T.	2019	Business Models for Sustainability: Choices and Consequences.
34	Spieth, P., Schneider, S., Clauß, T., & Eichenberg, D.	2019	Value drivers of social businesses: A business model perspective
35	Stål, H. I.	2018	Business models based on strongly sustainable entrepreneurship: Insights from a systemic literature review
36	Stubbs, W., & Cocklin, C.	2008	Conceptualizing a "Sustainability Business Model."
37	Stubbs, W.	2017	Characterising B Corps as a sustainable business model: An exploratory study of B Corps in Australia

38	Upward, A., & Jones, P.	2016	An Ontology for Strongly Sustainable Business Models: Defining an Enterprise Framework Compatible With Natural and Social Science.
39	Wells, P.	2013	Business Models for Sustainability
40	Wells, P.	2016	Economies of Scale Versus Small Is Beautiful: A Business Model Approach Based on Architecture, Principles and Components in the Beer Industry
41	Young, D., & Reeves, M.	2020	The Quest for Sustainable Business Model Innovation
42	Yunus, M., Moingeon, B., & Lehmann-Ortega, L.	2010	Building Social Business Models: Lessons from the Grameen Experience
43	O'Higgins, E., & Zsolnai, L.,	2018	Future of Business
44	O'Higgins, E., & Zsolnai, L.,	2018	What is Progressive Business?

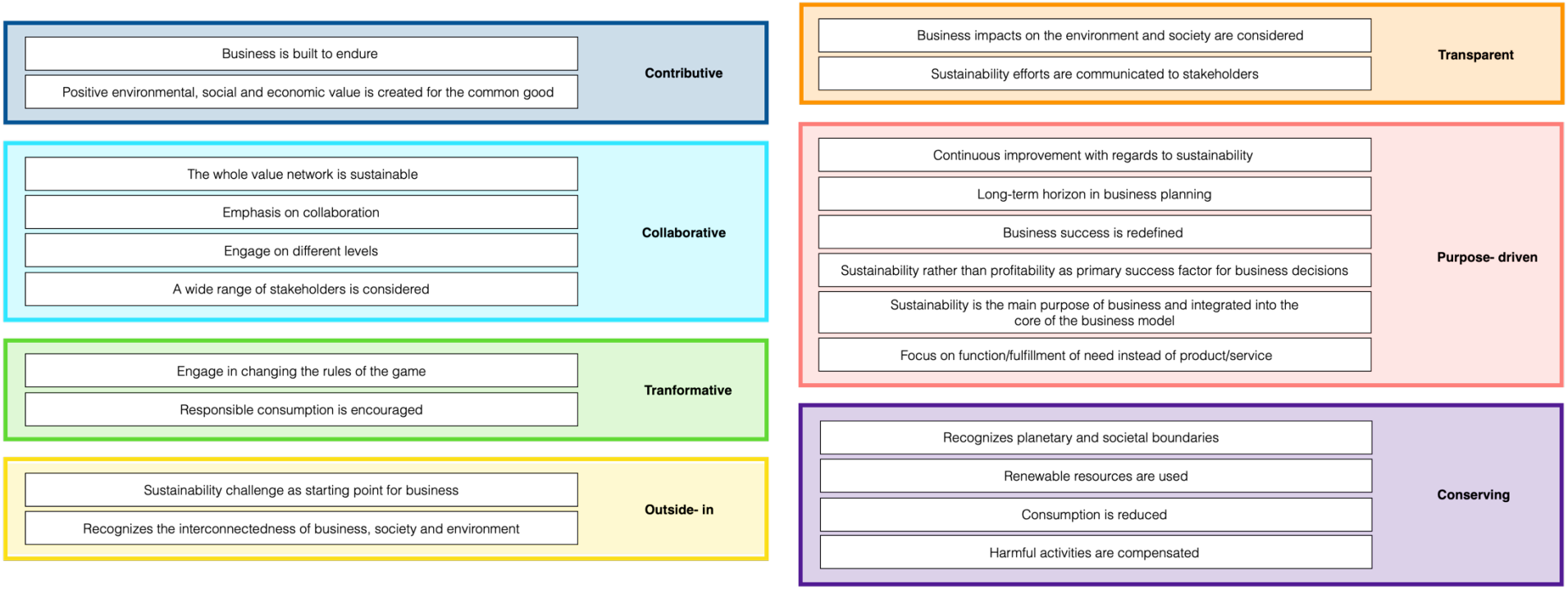
b. Codebook

#	Code	Characteristic	Definition	Example
1	A wide range of stakeholders is considered	Collaborative	The interests of a wide range of stakeholders are considered, interests of stakeholders are **aligned**. Stakeholders are **engaged** and collaborated with. Economic costs and also benefits are **fairly distributed** amongst stakeholders. The environment, the planet or nature as well as the society or future generations are considered to have a stake in the company (environmental and societal stewardship). Stakeholders as co-owners of company.	This explicit focus on stakeholder needs emphasizes the importance of businesses responding to their ecosystem and the primary stakeholders such as shareholders, employees, and customers, but also secondary stakeholders such as non-governmental organizations (NGOs) in order to gain and maintain legitimacy and license to operate with regard to various sustainable issues.
2	The whole value network is sustainable	Collaborative	No outsourcing of harmful impacts in supply chain (upstream as well as downstream). Responsibility for product use not left to customers, **stewardship** for product with company. Suppliers fulfil sustainability standards. Ethical and sustainable sourcing. **Fair compensation** of suppliers/partners. Companies/partners in value network **share the same purpose**. No unsustainable practices in supply chain (e.g. polluting production techniques, child labor).	The focal company does not shift its own socio-ecological burdens to its suppliers. This condition requires that a firm actively engages suppliers into sustainable supply chain management, which includes, for example, forms of social issue management and materials cycles that avoid/reuse wastes.
3	Emphasis on collaboration	Collaborative	Solving grand challenges requires **collaboration** of actors, such as companies, NGOs, governmental agencies. Coopetition. Firms actively manage relationships with partners and help them achieve higher levels of sustainability. **Co-creation**. Relationships are build on trust and mutually beneficial. Company aims to build sustainable communities.	With the rising global sustainability pressures, collaboration between firms and other key stakeholders is becoming more important. Value is no longer created by firms acting autonomously, but by firms acting together with parties external to the firm through informal arrangements or formal alliances. The business model may be viewed as a new unit of analysis in business, which takes into account these collaborative ties.
4	Engage on different levels	Collaborative	Sustainability efforts on **different organizational levels** to increase impact, ranging from firm level, to sectoral and cross-sectoral level, along a supply chain, or across an industry.	Truly sustainable firms engage on different levels of action to increase their sustainability impact and to ease conflicts between financial demands and societal needs.
5	Recognizes planetary and societal boundaries	Conserving	Company considers **planetary boundaries** and absolute limits of resources/ecosystems for example in their resource use. **Societal** limits are considered.	If it were easy to be a sustainable business—to create, deliver and capture value in a way that meets human needs within planetary limits—everyone would be doing it.
6	Harmful activities are compensated	Conserving	Harmful impacts of the business are **compensated**, e.g. C02 emissions, reforestation, **regenerated**.	Organizations aim to "do no harm" to the environment and stakeholders—such as introducing closed-loop processing—allowing for the prospect that they may need to make amends if harm is done. This means offsetting harmful activity in one area with compensating activities in another area (e.g., offsetting harmful emissions by purchasing carbon credits or planting trees).
7	Consumption is reduced	Conserving	Consideration and reduction of **ecological footprint. Resource efficiency**: e.g. less waste, less polution, energy efficiency, etc. are implemented. **Product Stewardship:** Products are designed and built to endure, can be easily repaired, recycled, reused. No resources are wasted. Lifecycle thinking.	Reduced consumption is a feature of an SBM, to reduce the "ecological footprint" of people and organizations.
8	Renewable resources are used	Conserving	Renewable energy, non-renewable-resources are **substituted** by renewable resources if ecologically/socially feasible.	Renewable or human-made resources are used instead of non-renewable resources (natural capital). Technological innovation minimizes, and eventually eliminates, non-recyclable waste and pollution.

9	Positive environmental, social and economic value is created for the common good	Contributive	Instead of reducing negative impacts, **positive** environmental, social and economic impacts/value is created and captured for the common good for and by stakeholders, not just a group of people such as shareholders. Preservation of environment while enhancing quality of human life. Contribution to **sustainable development**/solving ecological/societal problem. No value creation through unsustainable activities.	In this perspective, the values created change from the triple bottom line to creating value for the common good, defined as that which benefits society and the planet as a whole. This stands in contrast to the private good of individuals or groups.
10	Business is built to endure	Contributive	Business built to endure, must be **economically viable**, financially sustainable and stable.	According to Gittleson (2012) a company in the Standard & Poor's top 500 list in the 1920s had an average life in the list of 67 years; by 2012 that had fallen to 15 years—suggesting that corporate volatility has increased over the years. Put another way, there is a sense that corporations are not particularly enduring. [...] From the perspective of mainstream management practice, it could be argued that these are businesses that are "underperforming," but when a broader view is taken of the social contribution of business then the contribution of longevity in terms of say stability in employment and value creation, and of relevance to society, then these long-term businesses can be understood as having much to offer
11	Recognizes the interconnectedness of business, society and environment	Outside- in	Company recognizes the interconnectedness of a company with its environment, Company engages in business-society dialogue. **Systemic view**, focus is not only on single firm anymore but also broader socio-economic systems or networks. Systemic interactions are considered with regards to sustainability.	explicitly consider the relationship of a business with the natural environment, society, and economy in which the business is situated and interconnected and on which the business is ultimately dependent, and with all the individuals involved in that business (whether by choice or not).
12	Sustainability challenge as starting point for business	Outside- in	Sustainability challenges **starting point** for business activities and planning. Sustainability challenges as business opportunities. Different sustainability challenges for different markets and **contexts** are recognized as well as company specific challenges and capabilities to contribute to sustainable development.	The business typically starts out by reviewing pressing sustainability challenges society is facing and subsequently engages in developing new strategies and business models that resolve these challenges (although this sequence may also sometimes be reversed).
13	Continuous improvement with regards to sustainability	Purpose- driven	An effort is made to **continuously improve** on sustainability in a significant and meaningful way. This also includes consideration, mitigation or avoidance of trade-offs. Striving for excellence in sustainability management	Sustainability is not an absolute end-point, but rather an improvement process whereby future generations are progressively less prejudiced by contemporary practices
14	Focus on function/fulfilment of need instead of product/service	Purpose- driven	Focus on the fulfilment of **customer needs** instead of selling a product/service. Demand instead of supply thinking	Finally, financial models must shift from "price-per-unit" to pricing the "job-to-be-done", i.e., focus on the fulfillment of needs instead of selling amounts of product. Job-oriented pricing would be in line with approaches such as de-materialization through product-service-systems.
15	Long-term horizon in business planning	Purpose- driven	Sustainability requires planning over a **long- term horizon**. The company focus in planning reflects this fact. This stands in contrast to quarterly profit reporting. Short-terminism is avoided.	long-term perspective to the needs of future stakeholders underlines the complexity of long-term management practices and SBMs combined with short-term requests from shareholders for increased profits, which is a key challenge that needs to be addressed at the corporate level.
16	Business success is redefined	Purpose- driven	**Contribution** towards solving sustainability challenges/sustainable development main measure for business success instead of profits, **growth model** does not aim towards unlimited growth but optimum scale, growth of sustainability impact rather than growth of profit. Profit as an **enabler** of social and environmental purposes.	Their definition of business success is shaped only by the systems thinking natural, social, economic, and psychological scientific knowledge. In this definition of success, business proactively creates conditions that together resolve the underlying causes of the "global problématique", by simultaneously creating financial rewards, social benefits, and environmental regeneration.

17	Sustainability rather than profitability is the starting point of business decisions	Purpose- driven	When evaluating a business opportunity, companies should look at **sustainability first and profitability second**, innovations should aim at maximizing ecological and social benefits not just economic ones. This category also includes profitability principles of social businesses (e.g.cover its full costs from its operations/self-sustainable, investors only receive initial investment). **Prices** for products & services are **fair** and reasonable.	It invites companies to start thinking and acting from the outside-in and remain focused on contributing to solving sustainability challenges, even if there are more economically attractive, but unsustainable alternatives available. As long as such outside-in strategies provide not only a positive contributions to sustainability challenges, but also offer a satisfactory economic value for the shareholders, such a strategic approach is feasible for commercial businesses. Such strategies then fall into the domain of shared value creation.
18	Sustainability is the main purpose of business and integrated into the core of the business model	Purpose- driven	Contributing towards sustainability challenges the main reason a company does business, instead of making a profit for shareholders. Firm's **purpose** defined by sustainability values. All elements of BM **aligned** with sustainability. Sustainability at the **core** of the business instead of an add-on. This also includes the **incorporation** of sustainability into the value proposition, company culture, company mission or business purpose, or other functions of the business, such as quality control, human resource management or products & services. Cause- rather than profit-driven	Making a positive contribution to overcome sustainability issues and thus serving the common good becomes the main purpose of a truly sustainable business. In this perspective, the values created change from the triple bottom line to creating value for the common good, defined as that which benefits society and the planet as a whole. This stands in contrast to the private good of individuals or groups.
19	Responsible consumption is encouraged	Tranformative	Companies educate their customers/consumers in general about **sustainable consumption** behavior,nudging/influencing them towards more sustainable consumption pattern. **Advocating** towards sustainability. Building multipliers.	Motivate and help customers account for the effects of their consumption and consider an extended product responsibility. [...] The customer interface should motivate customers to take responsibility for their own consumption, as well as for the focal company's stakeholders. [6 The focal company should not shift its own (indirect) socio-ecological burdens to its customers. [...] Companies set up customer relationships with recognition of the respective societal challenges of differently developed markets.
20	Engage in changing the rules of the game	Tranformative	Challenge conventional thinking. **Leadership** for sustainability. Transformation towards sustainability. T**ransformative** thinking with regards to current approaches. Sustainability as an **opportunity** rather than a threat. Aim for diffusion of sustainable solutions and aim to replace unsustainable practices. Sustainability initiatives are **proactive** instead of reacting to external pressure or regulations, they also go beyond what's legally required. Sustainable **innovations** are generated.	'True' business sustainability, in our view, should actually be rooted in the ambition to change the system it is part of instead of settling for compliance with or surrendering to market mechanisms. In other words, moving towards BST 3.0 may require a new social contract between business and society in which sustainability is a non-negotiable item.
21	Business impacts on the environment and society are considered	Transparent	A business' **impacts** on the environment and society are measured and considered in business decisions. **Externalities** are considered in cost-benefit analysis, externalities are priced/internalized. Consider **rebound effects** in scaling sustainable innovations.	Also, this layer seeks to capture the key social impacts of the organization that derive from those relationships. Doing so provides a better understanding of where are an organization's primary social impacts and provides insight for exploring ways to innovate the organization's actions and business model to improve its social value creation potential.
22	Sustainability efforts are communicated to stakeholders	Transparent	A company is **open** about its sustainability strategy and most importantly its impacts, and **report** about it in a transparent and proactive manner.	Transparency is required with regard to decisions and actions taken by companies in order to evaluate, compare, and improve the business contributions to sustainability. But also transparency related to the effects and impacts of the actions taken. Beyond communication and reporting on such contributions, external assurance will be of essence to satisfy the need of transparency. Effective reporting will need to focus more on depth and materiality, possibly at the expense of the breadth of issues.

c. Seven Original Characteristics



Appendix II: Expert Interviews

a. Details of the Expert Interviews

Name	Organization	Position	Category	Date and Time of Interview (via zoom)
Olmar Albers	öbu	Director	NGO/Think-Tank	08.02.2021, 16:30
Dr. Manuel Braun & Marlene Kick	SYSTEMIQ Ltd. & ex. McKinsey (M. Braun)	Engagement Manager, Associate	Consultancy	12.02.2021, 13:00
Prof. Dr. Stefan Hankammer	Alanus University of Arts and Social Science	Professor for Sustainability Management & Social Entrepreneurship	Academia	10.05.2021, 10:45
Josephine Herzig	B-Lab, Switzerland	Co-Director Engagement Programs	NGO/Think-Tank	20.11.2020, 13:30
Connie Low	Impact Hub Basel	Co-Founder & Managing Partner	Social Entrepreneurship	14.06.2021, 16:00
Maike Kauffmann	Stiftung Verantwortungseigentum	Research and Think-Tank	Social Entrepreneurship	11.12.2020, 15:00
Patricia Matzdorf-Gobeli	WWF	Senior Partnership & Project Manager	NGO/Think-Tank	13.01.2021, 11:00
Tobias Meier	Ecos	Project Leader Team “Green Economy”	Social Entrepreneurship	03.12.2020, 09:30
Dr. Ralf Nacke	Gemeinwohlökonomie Schweiz	Board of Directors	NGO/Think-Tank	11.12.2020, 11:00
Markus Sauerhammer	Social Entrepreneurship Netzwerk Deutschland	Chairman	Social Entrepreneurship	15.01.2021, 15:00

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b. *Development of Interview Questions From Research Questions*

Research Questions	Dimensions of Analysis	Interview Questions	Purpose of Questions
Research Question 1: How can a truly sustainable business model be conceptualized?	**Characteristics of Sustainable Business Models**	**What do you think are the main characteristics of a sustainable business model?** - Which characteristics determine if a business model is sustainable or not? - How is it different from a traditional business model? - What are the main barriers to this development? - What has to change from the current status quo?	*Determine* understanding of how the expert sees a sustainable business model, *verify* and *extend* findings from literature review and conceptual development. *Understand* barriers and needs to change.
	Conceptualization of a Truly Sustainable Business Model	**What does a sustainable business model look like that effectively and successfully creates positive contributions towards societal and environmental challenges?** - How can a company integrate sustainability challenges into its business model? (Value proposition) - How can a company create positive societal value through its production/provision of service? (value creation & delivery) - How can a company capture societal and environmental value for a wide range of stakeholders? (value capture)	*Verify* and *extend* findings on sustainable business model characteristics. Incorporate *normative* and *transformative* aspects from a viewpoint from practice.
	Discuss findings from empirical and conceptual analysis with expert		*Verify* and *extend* findings from literature review and conceptual development. Check *practical* relevance.
Research Question 2: What are ideal types of truly sustainable business models for sustainable production?	**Challenges and Enablers of Sustainable Production and Consumption**	**What are the most important challenges for sustainable production and consumption?** - Which are the most important challenges of sustainable production and consumption now and in the future? - Which are the most pressing ones? - Are there any industries which are especially important (key industries)?	*Complement* analysis from theoretical part with up-to-date insights from experts.
	Ideal Types of Sustainable Production and Consumption	**Can you think of any business models which successfully and effectively address those challenges?** - Do you know any ideal types, patterns or kinds of business models for such challenges? - Can you think of any specific companies which effectively address those sustainability challenges? - Can you think of any forward thinking concepts I would benefit from?	*Identify* the most *progressive* approaches and contexts. *Connect* sustainable production and consumption with sustainable business models.
	Discuss findings from conceptual analysis with expert		*Verify* and *extend* findings from literature review and conceptual development.

Development of interview questions from the research questions, own depiction, inspired by Kaiser (2014, p. 57)

c. *Interview Guidelines (provided to Experts Prior to Interview)*

Truly Sustainable Business Models – Ideal Types for Sustainable Production and Consumption
Dissertation Fiona Stappmanns

Expert interview Connie Low, Co-Founder/Managing Partner, Impact Hub Basel 14.06.2020

The data obtained from this interview will be anonymized and only used for the purpose of this dissertation.

Introduction

Overview of my dissertation: *Truly Sustainable Business Models – Ideal Types for Sustainable Production and Consumption*

Goal: Characterize a sustainable business model that effectively *contributes* towards solving a sustainability challenge and identify a few, pioneering *ideal types* of such business models.

- Starting point: mismatch between company actions and state of planet and society (*big disconnect)*
  - ➔ *How can companies effectively contribute to sustainable development/solving sustainability challenges?*
- Sustainable business models informed by the concept of *true business sustainability*[1]
  What does this mean?
  - Change of perspective from *inside-out* to *outside-in* (sustainability challenges as a starting point for business decisions)
  - *Creating positive* instead of just reducing negative impacts
- Identify ideal types of business models for sustainable production and consumption
- **Important**: thesis explicitly takes a **normative approach** and aims at what *should* be instead of describing status quo. In a perfect world, how does a sustainable business models look like?

1. Characteristics of truly sustainable business models

- **What are the main characteristics of a sustainable business model?**
  Which characteristics determine if a business model is sustainable or not? How is it different from

[1] Dyllick T, Muff K. Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability (2016). *Organization & Environment*. 29(2). 156-174.

a "traditional" business model? What are main barriers to this development? What has to change from the current status quo?

- **How does a sustainable business model look like that effectively and successfully creates positive contributions towards societal and environmental challenges?**
  Value proposition: How can a company integrate sustainability challenges into its business model? *Value creation & delivery*: How can a company create positive societal value through its production/provision of service? *Value capture*: How can a company capture societal and environmental value for a wide range of stakeholders?

- **Discussion of characteristics and framework for truly sustainable business models (slide)**

2. Ideal types of truly sustainable business models

- **What are the most important challenges for sustainable production and consumption?**
  Which are the most important challenges of sustainable production and consumption now and in the future? Which are the most pressing ones? Are there any industries that are especially important (key industries)?

- **Can you think of any business models which successfully and effectively address those challenges?**
  Can you think of any ideal types, patterns, concepts or kinds of business models for such challenges? Or any specific companies which effectively address those sustainability challenges?

- **Discussion of ideal types of truly sustainable business models (slide)**

3. Summary and conclusions

- Is there anything we did not cover until now that is important either for sustainable business models or sustainable production and consumption? Do you have any further comments?

Thank you for your support and expertise!

Feel free to contact me at any time regarding questions or further comments.

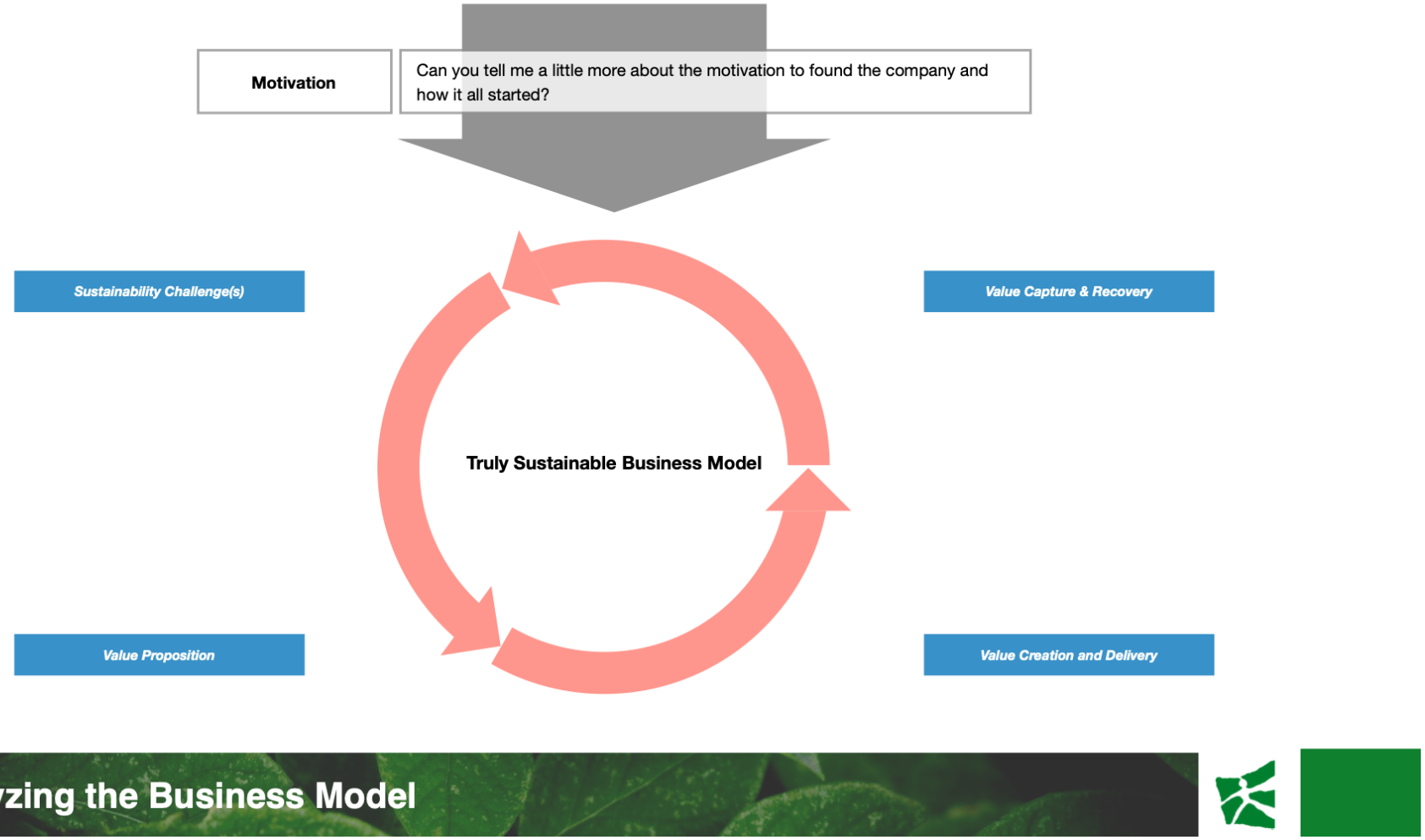
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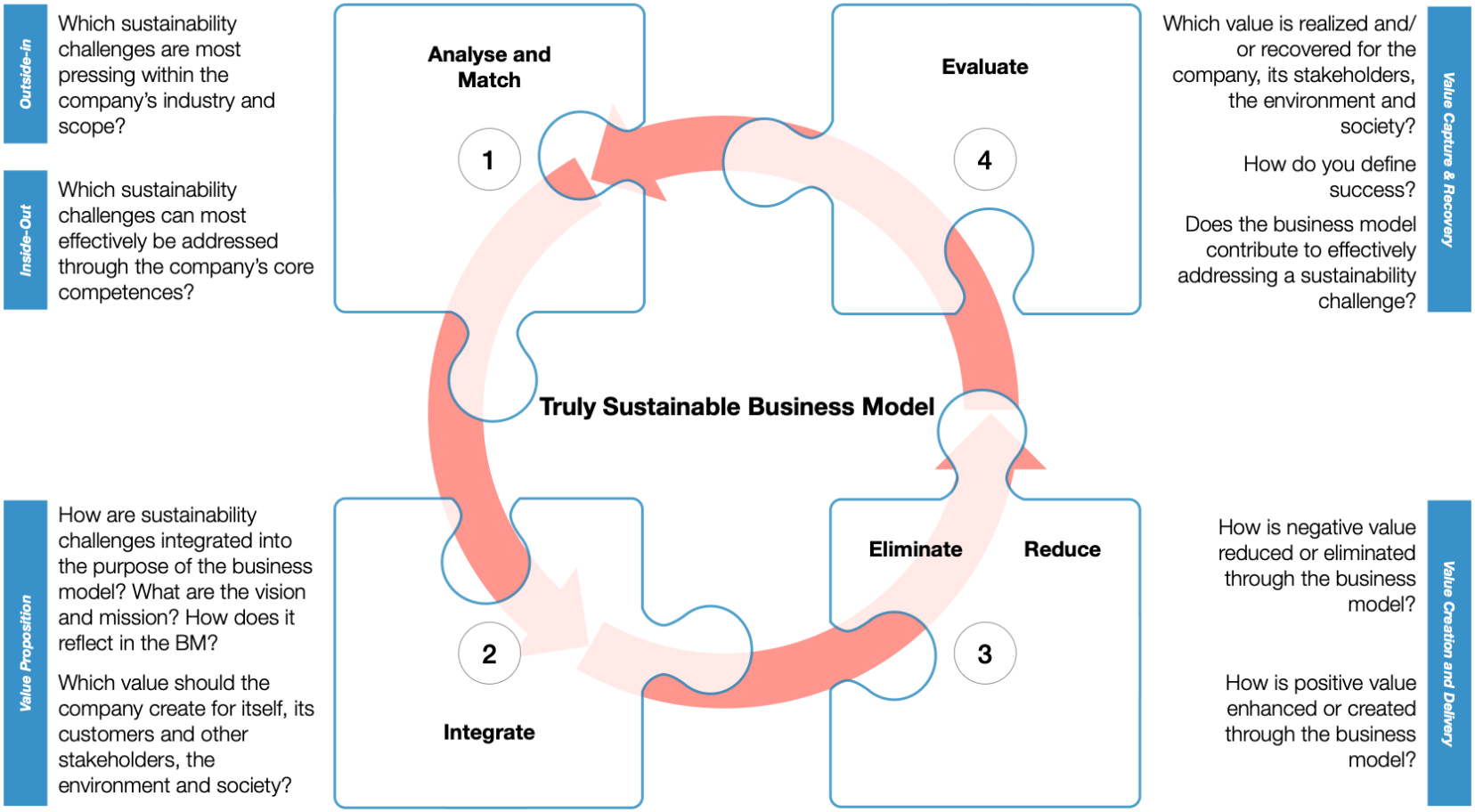
Appendix III: Cases

a. Overview of Interviews/Workshops for Cases

Name	**Company**	**Position**	**Date and Time of Interview (via zoom)**
Workshop Student Impact	Oxara		16.11.2020, 18:00
Gnanli Landrou, PhD Dr. Roland Weippert	Oxara	Co-Founder and Business Strategy Lead Strategy and Business Development	28.05.2021, 15:00
Moritz Möller	Veganz	Chief Marketing Officer (CMO)	21.05.2021, 10:00
Tobias Joos	Crowd Container	Founder and CEO	01.06.2021, 17:00

b. Excerpt from Presentation Used During the Case Study Interviews




Outside-in
Which sustainability challenges are most pressing within the company's industry and scope?
Inside-Out
Which sustainability challenges can most effectively be addressed through the company's core competences?
Analyse and Match
1
Evaluate
4
Truly Sustainable Business Model
Value Capture & Recovery
Which value is realized and/ or recovered for the company, its stakeholders, the environment and society?
How do you define success?
Does the business model contribute to effectively addressing a sustainability challenge?
Value Proposition
How are sustainability challenges integrated into the purpose of the business model? What are the vision and mission? How does it reflect in the BM?
Which value should the company create for itself, its customers and other stakeholders, the environment and society?
2
Integrate
Eliminate
Reduce
3
Value Creation and Delivery
How is negative value reduced or eliminated through the business model?
How is positive value enhanced or created through the business model?



Focus	Which of those characteristics does the company focus on? Where are its strengths?
Improvement	Which of those characteristics are not as relevant for the business activities? Which of those characteristics are currently improved?

Contributive

Positive value for the common good, i.e. society, the environment as well as the company is created. **No** business activities build on unsustainable, exploiting practices. **Long-term financial stability** instead of short-term profit maximization.

Collaborative

The company **collaborates** with a wide variety of partners to make its entrepreneurial environment more sustainable. It does not exist in isolation but in a **network of like-minded partners** who share the same purpose and values of true business sustainability. The company includes a multitude of **stakeholders** on **different levels** in its business decisions and considerations. Negative value creation and impact is **not outsourced** in the supply chain. The company reports **proactively** and **transparently** about its impacts to the stakeholders and engages them in their communication. Customers are included in product development (**co-creation**).

Transformative

The company **actively** engages in **transforming** the current economic system. It takes on a **leading role** in this development and regards sustainability as an **opportunity** instead of risk. Unsustainable solutions are **substituted** through sustainable ones (no add ons). The company creates **awareness** and **educates** about sustainable consumption, and encourages its customers to r**ethink their consumption behavior**. It creates incentives (**nudging**) to encourage sustainable consumption choices for their customers.

Outside-in

The company adopts an **outside-in** perspective. This means sustainability challenges are the **starting-point** for business decisions. It recognizes the **interconnectedness** of business, society and the environment and how they influence each other. **Impacts** of business activities on society and environment, and **rebound-effects** are considered in business decisions and those **externalities internalized**.

Purpose- Driven

Sustainability is the main **purpose** of business and integrated at the **core** of the company. Sustainability is prioritizes over profitability for economically viable business decisions. This also reflects in the company's definition of success. Business planning adopts a **long-term perspective**. Instead of selling products, the company addresses a **need**. The firm **continuously** aims to improve with regards to sustainability.

Conserving

Resource use considers **planetary and societal boundaries**. This involves to a constant **reduction** in resources, a **regeneration** of harmful impacts or the primary use of **renewable** resources.

Curriculum Vitae

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Education

02/2016-01/2022	**Doctorate in Management**, University of St. Gallen
2012-2014	**Master of Science in Strategic Management**, University of Innsbruck
2007-2012	**Bachelor of Science Business and Economics**, University of Frankfurt/Main

Professional Experience

05/2021-present	**Wyss Academy for Nature**, Bern Switzerland Research Scientist, Synthesis Center
11/2015-04/2021	**Institute for Economy and the Environment, University of St. Gallen (HSG)**, St. Gallen, Switzerland Research Assistant
02/2017-present	**Mountains and the Ocean Photography**, Bern Switzerland Freelance Photographer
11/2014-01/2016	**Institute for Strategic Management, Marketing and Tourism, University of Innsbruck**, Innsbruck, Austria Research Assistant
06/2013-09/2013	**Accenture AG**, Frankfurt/Main, Germany Assistant IT Consulting
06/2011-09/2011	**BMW AG**, Munich, Germany Assistant Technical Purchasing
09/2009-03/2010	**Bosch Rexroth Corporation USA**, Fountain Inn, SC, USA Assistant Strategic Purchasing
07/2007-08/2007	**Dandenong Nationalpark**, Victoria, Australia Volunteer Environmental Conservation