

**MEASURING SUSTAINABLE BUSINESS MODEL INNOVATION
IN THE FASHION INDUSTRY**

by

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ABSTRACT

The purpose of this study was to develop a set of measures that can be used to assess sustainable business model innovation (SBMI) in fashion apparel companies. The study included two phases. In Phase I, the researcher interviewed 12 experts to obtain their broad insights about SBMI. In Phase II, the researcher analyzed the interview transcripts and identified nine concepts for which to develop measures. These concepts were translated into 32 measures after an iterative grading process to refine the measures. Once developed, the researcher sent a questionnaire to the 12 experts from Phase I to obtain their feedback on the measures. Nine completed surveys were returned.

The study found that each of the nine concepts were, in fact, relevant for measuring SBMI. The experts believed that the measures were important, useful, and applicable to both small and large companies. Based on the experts' feedback, the nine concepts were successfully operationalized and translated into a business-relevant language. The experts agreed that the measures would be useful for companies conducting a self-assessment of their sustainability innovation strategies and for investors attempting to understand whether SBMI is occurring within a company. The feedback provided by the experts can be used in future research to further refine and ultimately test the measures.

Chapter 1

INTRODUCTION

1.1 Introduction

The fashion industry is a major contributor to negative social and environmental impacts. In 2015, the industry's environmental impacts were estimated to have equaled 79 billion cubic meters of water used, 92 million tons of waste produced, and 1,715 million tons of CO₂ emitted (Pulse, 2017). Global clothing production doubled between 2000 and 2015, with garments increasingly being discarded within one year of purchase (A new textiles economy, 2017). In terms of social impacts, a lack of supply chain transparency beyond Tier 1 suppliers (Report, 2013) and top-down pressure within the supply chain (Lim & Phillips, 2008) means labor issues and poor working conditions run rampant – leading to major catastrophes such as the 2012 Tazreen factory fire and the 2013 collapse of the Rana Plaza. While many retailers have implemented supplier codes of conduct and audits to attempt to reconcile these issues, the net result is that root causes have not been effectively addressed and lasting change remains elusive (Gimet, Guilhon, & Roux, 2015; Park & Dickson, 2008).

In addition to the social and environmental issues that plague the fashion supply chain, the industry has been suffering from unprecedented disruption and poor financial performance (State, 2017). This has resulted in a string of bankruptcies and store closures – including 7,000 closures and 662 bankruptcy filings in 2017 alone (Isidore, 2017). As technology disrupts the pace of traditional fashion cycles and the

manner in which consumers engage with fashion companies, the rate of change is outpacing companies' ability to keep up (Shaping, 2017). The World Economic Forum predicts that businesses will have no choice but to "constantly innovate and disrupt themselves" (2017, p. 4). Business of Fashion's Doug Stephens paints the urgency of innovation within the fashion industry, saying, "One of the very few certainties in this turbulent and fast-evolving retail market is that someone will eventually reinvent what you do" (2018, para. 22).

In light of the social, environmental, and economic turmoil of the fashion industry, the call for innovation has become more prevalent in recent years (A new textiles economy, 2017; State, 2017; Stephens, 2018). This call, however, goes beyond mere product or process innovation, instead urging companies to reevaluate the makeup of their business models. Current attempts to achieve sustainable outcomes have been thwarted by structural obstacles in the supply chain and in the business models of apparel brands and retailers themselves (Gereffi & Frederick, 2010; Hurley & Miller, 2006). In order to overcome these problems and effectively pursue social, environmental, and economic sustainability, it is necessary to understand how brands and retailers can address these deficiencies. This process of remaking business models to be more conducive to sustainability is called sustainable business model innovation.

Not only do fashion companies need to know how to innovate their business models to become more sustainable, they also need to be able to measure their progress in this pursuit (Kirsner, 2015). Traditional business metrics, however, are incompatible with the goals of radical innovation and can even be harmful for innovation projects (Kristiansen & Ritala, 2018; Kuczmarski, 2001; Yoon, 2017). Research also shows a lack of integration of social and environmental sustainability

principles into traditional business metrics (Sroufe, 2017). Without knowing which components contribute to their success, companies are not able to manage the drivers that contribute to sustainable business model innovation (Hansen & Schaltegger, 2016). These factors suggest a need for a new measurement tool to adequately capture and assess the degree of sustainable business model innovation within a company. Such a tool could be useful for investors to help guide investment decisions, and for companies to help mitigate risks, drive value, and avoid blind spots in their sustainability strategies.

1.2 Literature Review Overview

The literature review opens with a discussion of the current state of the fashion industry: the problems it is facing as well as the reasons why past approaches for pursuing sustainability have not been effective. Common strategies used by brands and retailers to address social and environmental sustainability include codes of conduct and supplier monitoring (Dickson, 2013; Dickson, Eckman, & Loker, 2009). While these were important first steps for brands and retailers seeking to reform the industry, they have many flaws that have limited their effectiveness. The literature calls for more strategic approaches to tackling social and environmental problems (Porter & Kramer, 2006).

The fashion industry is also suffering from a financial perspective, as significant disruption from fast fashion, e-commerce, and off-price retail has exposed the weakness of the traditional fashion business model (Clark, 2017). Consumers are spending relatively less on clothing and footwear compared with other categories, and fashion companies have become increasingly reliant on promotions and markdowns to deal with overloaded inventory (Associated Press, 2017; Gustafson, 2017). The year

2017 was characterized by store closures and bankruptcies as distribution channels have evolved beyond traditional brick and mortar (Shaping, 2017). In the face of these social, environmental, and economic challenges, the need for structural change is clear: to address the root causes of these challenges, the fashion industry is desperately in need of sustainable business model innovation.

To study sustainable business model innovation, it was necessary to review the literature surrounding business model creation, development, and innovation, as well as the literature on sustainable development. Each of these topics was first covered independently, followed by a review of their convergence.

Business models became a popular topic in literature following the emergence of Internet companies in the 1990s (DaSilva & Trkman, 2014). Using the resource-based view and transaction cost economics theories, DaSilva and Trkman defined business models as “combination[s] of resources which through transactions generate value for the company and its customers” (2014, p. 383). Others have described the business model as the architecture of a business, consisting of value creation, value proposition, and value capture (Rahbek et al., 2018; Teece, 2010). A seminal development in business model research is Osterwalder and Pigneur’s (2010) Business Model Canvas, which outlines nine building blocks to help companies strategically develop their business model. Once developed, business models are resistant to change (Christensen et al., 2016). Yet, business models need to evolve in order to survive (Hart & Milstein, 2003; Teece, 2010). This need is the foundation for the concept of business model innovation.

Business model innovation involves changes to the way a company captures, creates, and delivers value (Rahbek et al., 2018). This radical type of innovation

involves replacing the underlying business logic (Schaltegger et al., 2012), substantially changing the business model components (Schneckenberg et al., 2016), transforming the system of activities within a firm (Clauss, 2017), and creating new value (Markides, 2006). Business model innovation has been found to be the defining trait of companies who are consistently top performers (Mitchell & Coles, 2003).

Firms that choose to pursue business model innovation face many challenges, including organizational inertia (Gilbert, 2005), uncertainty and ambiguity (Chesbrough, 2010), and tension between managing today's business and creating tomorrow's opportunities (O'Reilly III & Tuchman, 2004). These challenges serve as starting points for developing a measurement scale in this study, as they represent common pitfalls that prevent companies from progressing in their journey toward sustainable business model innovation. However, additional obstacles exist that specifically relate to sustainability. For this reason, the focus of the literature review turns to sustainable development.

In order to provide solid grounding for the conversation about sustainability, the review of literature traces the concept of sustainable development back to its origin: The 1987 Brundtland Report. In this report, sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission, 1987, p. 41). The Brundtland Report asserted that 'business as usual' would not be enough to bring about sustainable development, instead calling on companies to revisit their underlying assumptions about their role in society. Companies were referenced as key players in the pursuit of sustainable development.

Following the publishing of the report, many scholars attempted to merge sustainability principles with traditional business frameworks and help companies understand where their operations were out of alignment with the sustainable development goals (SDGs). The first of these efforts came about in 1989 with The Natural Step framework. This framework employed techniques such as backcasting (a sustainability gap analysis between a sustainable future and current activities) and upstream thinking (a focus on root causes of sustainability problems rather than symptoms) – two elements that are still referenced in the literature today (Robèrt, 2000). The Natural Step framework eventually evolved into the Framework for Strategic Sustainable Development, which provided more guidance for companies toward action and implementation of sustainability strategies (Robèrt et al., 2013).

Finally, the Future-Fit Business Benchmark builds on previous frameworks by providing 23 extra-financial break-even points companies can use as goals for their sustainability efforts. The benchmark includes specific key performance indicators for each goal, further embedding business language into the sustainability principles. Furthermore, the benchmark redefines familiar business terms, such as value and accountability, to incorporate sustainability. The purpose of researching these frameworks was to understand how sustainability and business intertwine and what challenges have been encountered in this relationship.

At this point, the review turns to sustainable business models, as these operate under significantly different logic compared to traditional business models (Stubbs & Cocklin, 2008). Three important distinctions between sustainable and traditional business models are discussed: different definitions of value (Alexander, 2007), additional stakeholder groups to be considered (Boons & Lüdeke-Freund, 2013), and

changes to performance metrics (Chung & Cho, 2017). Due to these differences, the literature has increasingly turned toward investigating the business case for sustainability. The business model rationale links sustainability to a company's value creation, proposition, and capture mechanisms (Schaltegger et al., 2012), which in turn requires systematic and holistic management of sustainability within the company.

Sustainability management is driven by profit- or legitimacy-seeking motives (Schaltegger & Hörisch, 2017), and requires that a company diagnose its current reality, conduct an opportunity assessment, and implement its sustainability strategy (Birkin et al., 2009; Hart & Milstein, 2003). Challenges for sustainability management include systemic inconsistencies between sustainability principles and traditional business priorities (Lehman & Kuruppu, 2017), structural tensions with traditional business models (Wells, 2004), the dominance of the Business Model Canvas (França et al., 2017), and the shortcomings of traditional measures of value (Schaltegger et al., 2017; Yang et al., 2017). These challenges, as with the challenges related to business model innovation, are key considerations for the development of a measurement tool for sustainable business model innovation. In addition, the problems inherent in sustainability management demonstrate that sustainability is not compatible with traditional business models: its implementation necessitates business model innovation because sustainability requires changes to the very core of the business.

Research in the field of sustainable business model innovation is not yet mature, exhibiting wide dispersion of articles across multiple journals and a lack of consensus about the overall concept (Adams et al., 2015). Scholars do agree, however, that sustainability-oriented innovation is substantially different from economic-oriented innovations (Siqueira & Pitassi, 2016). Two components stand out as being

likely contributors to successful sustainable business model innovation: alliances between emerging and incumbent companies (Hockerts & Wüstenhagen, 2009) and open innovation (O'Connor, 2008). These elements open companies up to new ideas and additional resources existing outside their organizational boundaries, improving the likelihood of successful innovation.

The final section of the literature review examines the concept of measurement and investigates metric development. Metrics are used by businesses to quantify both the efficiency and effectiveness of an action (Heikkilä et al., 2016). They serve as hypotheses about the functions of business systems, and convey the degree to which a company's hypotheses were correct (Kaiser & Young, 2018). One of the most popular performance measurement tools is the Balanced Scorecard (Kaplan & Norton, 1992). This scorecard incorporates financial and operational measures across four dimensions to provide managers with a comprehensive view of the business.

Traditional measurement tools fall short of the requirements for measuring sustainable business model innovation. To measure innovation performance, metrics need to capture each stage in the process of innovation (Dewangan & Godse, 2014; Zizlavsky, 2016). The main focus of innovation measurement research is product, process, or technological innovation. Only one comprehensive measurement scale exists for business model innovation, though it does not include sustainability (Clauss, 2017). That being said, the literature provides insight into why traditional metrics are not suitable for measuring innovation, and suggests alternatives that could be more useful (Askar et al., 2009; Hempel, 2006; Muller et al., 2005).

Lastly, the task of integrating sustainability into innovation measurement is investigated. Tools for measuring sustainable businesses, such as the Dow Jones

Sustainability Index and the Sustainability Accounting Standards Board, are discussed to provide insight into how sustainability is measured in the business world. However, neither of these measurement tools incorporates innovation. One advancement in sustainability reporting is an adaptation to Kaplan and Norton's (1992) work: the Sustainability Balanced Scorecard (Figge et al., 2002). While this scorecard does include an innovation dimension, there is an ongoing debate in the literature about its usefulness: two of the original authors question its ability to help companies achieve transformational change (Hahn & Figge, 2018), while the other original authors believe the tool is valuable for implementation and measurement (Hansen & Schaltegger, 2018).

Overall, the review establishes the need for sustainable business model innovation within the fashion industry, as well as the need for a new measurement tool to appropriately capture this process.

1.3 Purpose

The purpose of this study is to develop a set of measures that can be used to identify and assess the degree of sustainable business model innovation in fashion apparel companies. Through a thematic review of literature that explores both the capabilities that promote and the challenges that inhibit sustainable business model innovation, key concepts that contribute to the degree of innovation within a company will be identified. These concepts will then be operationalized through the development of quantitative and qualitative measures. In two phases, experts will provide input and feedback to determine which concepts are most important to measure, and then to refine the chosen measures. The objectives for the study are as follows:

1. Obtain expert input about the concepts that contribute to sustainable business model innovation and about how to assess this type of innovation in the fashion industry.
2. Consolidate relevant concepts and develop measures for each of them.
3. Obtain expert feedback on the quality and utility of the measures.

1.4 Justification

Sustainable business model innovation is a growing area of research that has not yet reached the level of maturity (Yang et al., 2017). Sustainability innovation is increasingly being treated as a business model problem, rather than a product- or process-related problem (Adams et al., 2015). With shortages of resources and ecosystem services likely to become a limiting factor for businesses in the near future, the need for sustainable business model innovation is urgent (Lovins et al., 1999). This fact is particularly true in the fashion industry, as past attempts at improving the sustainability of the industry have not brought about significant improvement (Dickson, 2013). There is a pressing need for companies to be able to track, evaluate, and implement sustainable business model innovation: this can only be accomplished if an appropriate system of measurement is available.

Currently, the literature on business model innovation measurement is scarce – this gap is even more pronounced in the area of sustainable business model innovation. Only one comprehensive measurement tool exists for business model innovation (Clauss, 2017), yet this tool does not encompass sustainability concerns. The literature suggests that innovation processes vary by industry (Muller et al., 2005). Therefore, in order to adequately address the unique sustainability challenges facing the fashion industry, it is crucial to develop a specific measurement tool that captures

the nuances of sustainable business model innovation within fashion companies. The Boston Consulting Group and Global Fashion Agenda's *Pulse of the Fashion Industry 2017* report showed rising interest in sustainability among fashion companies, with an 18-percentage-point year-over-year increase in the number of executives saying they use sustainability targets as guiding principles for their strategic decisions (Pulse, 2017). However, companies are also finding further advances in their sustainability strategies difficult to achieve (Pulse, 2017). A measurement tool can help these companies identify key areas where their efforts are lagging and signal where they can direct their attention in order to drive lasting impact.

The measures for gauging the degree of sustainable business model innovation have many potential applications. This research will aid incumbent apparel companies who are trying to transform their business model into one that is compatible with and supportive of social and environmental sustainability. Understanding the components of sustainable business model innovation, as well as how to measure it, will help companies avoid blind spots, tap into new opportunities to create and capture value, and overcome the challenges that have trapped them in 'business as usual' thinking. For emerging companies, these measures will give them a head start as they launch their businesses by helping them to anticipate and address potential pain points. For investors, the measures could help them identify when a company is doing something truly groundbreaking and predict which initiatives and business models will be successful.

1.5 Assumptions and Limitations

This study rests on the assumption that the current fashion industry business model is broken, and that the only viable way forward is through innovation. The first

section of the literature review, The State of the Fashion Industry, outlines the basis for this assumption by communicating the ways in which the industry currently falls short of economic, social, and environmental sustainability.

A limitation of this study arises from the chosen sample size: the sample consists of 10-12 individuals and, therefore, cannot provide an exhaustive discourse on the topic of measuring sustainable business model innovation. That being said, the chosen individuals represent both breadth and depth of experience inside and outside the fashion industry, lending enhanced validity to this exploratory study. A second limitation arises from the fact that testing of the measurement tool is outside the scope of this study. The tool will need to be tested, refined, and revised as new information becomes available in order to ensure it provides real value to practitioners in the fashion industry. Measurement development will include an iterative process of evaluating and refining the metrics, which, in addition to the expert input and feedback on the metrics, will contribute to the strength of the measurement tool.

1.6 Key Terms

- **Business Model:** the architecture of a business (Rahbek et al., 2018) detailing the benefit a business delivers to its customers, how it will organize to do so, and how it will capture a portion of the value it delivers (Teece, 2010)
- **Business Model Innovation:** “the innovation of a system of products, services, technology, and/or information flows, which results in changes in the three business dimensions of value creation, value proposition, and value capture” (Clauss, 2017, p. 387)
- **Key Performance Indicator (KPI):** a measure of the observable results of a firm’s value-creating activities and behaviors (Kaiser & Young, 2018)

- **Innovation:** “the process through which value is created and delivered to a community of users in the form of a new solution” (Todhunter, 2009, para. 5)
- **Performance Measure:** a variable used to quantify the efficiency and/or effectiveness of an action (Heikkilä et al., 2016)
- **Sustainable Business Model Innovation:** innovation that changes the three business model dimensions of value proposition, value creation, and value capture and simultaneously creates value for the company, society, and the environment (Bocken et al., 2015; Lüdeke-Freund, 2010; Rahbek et al., 2018)
- **Sustainable Development:** “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission, 1987, p. 41)

Chapter 2

REVIEW OF LITERATURE

2.1 State of the Fashion Industry

The fashion industry consists of a network of producers, suppliers, and buyers that spans the entire globe. Textile and apparel production is the top manufacturing employer in the world, and this sector has played a vital role in global economic development and industrialization (Dickerson, 1999). In 2017, the value of worldwide textile and apparel exports exceeded \$750 billion, representing 4% of world merchandise exports that year (World trade, 2018). According to current trends in both population and GDP growth, annual global apparel and footwear consumption is expected to rise from 62 million tons in 2017 to 102 million tons by 2030 (Pulse, 2017). Alper Şen's review of the United States fashion industry illustrated some of the defining traits of the modern industry: it is "characterized by short product lifecycles, volatile and unpredictable demand, tremendous product variety, long and inflexible supply processes, and a complex supply chain" (2008, p. 571).

Following a period of growth led by the Baby Boomer generation, the industry became overstored at the turn of the 21st century, with retailing space per capita in the United States increasing from eight to nineteen square feet in a period of twenty years (Şen, 2008). This created a dilemma following the 2008 financial crisis, when consumers learned to expect sales and retailers became heavily reliant on markdowns to move their inventory (Thomas & Hirsch, 2018). The resulting bankruptcies, mergers, and acquisitions meant the majority of retail sales came to be concentrated in

the hands of a few large companies (Şen, 2008). The effects of this consolidation of retail power have reverberated throughout the supply chain, creating top-down pressure on suppliers to meet retailers' demands (Park & Dickson, 2008; Şen, 2008). Retailers have shifted toward modular production networks, outsourcing functional activities to their supply chains to achieve the lowest costs possible (Gereffi & Frederick, 2010). This change transfers the risk and complexity of logistics and sourcing coordination away from retailers and onto their Tier 1 suppliers (Gereffi & Frederick, 2010).

This transfer has two major implications. First, suppliers must develop additional capabilities in order to compete (Gereffi & Frederick, 2010). Instead of being able to rely on cut, make, and trim (CMT) manufacturing, suppliers need to upgrade their offerings in order to attract retailers. In addition, retailers' pursuit of supply chain flexibility means suppliers must absorb more of the risk associated with production. Second, the supply chain has developed an iceberg structure with very limited visibility beyond Tier 1 suppliers (Hurley & Miller, 2006). When retailers locate highly capable Tier 1 suppliers, these relationships tend to be strong and stable with clear channels of communication (Hurley & Miller, 2006). Beyond Tier 1, however, there is a "sharp increase in downward pressure in relation to price and turnaround times" (Hurley & Miller, 2006, p. 26). In a survey of 335 global manufacturing executives, KPMG reported 49% do not have visibility beyond Tier 1 (Report, 2013).

The lack of supply chain transparency has not only made it extremely difficult to identify, quantify, and rectify social and environmental issues within the fashion industry, but it has also allowed problems to continue unabated – often with

catastrophic results. The 2013 collapse of the Rana Plaza in Bangladesh, which killed 1,134 garment workers, alerted many inside and outside the industry to this reality. Documentaries and books, such as *River Blue*, *The True Cost*, and *Overdressed: The Shockingly High Cost of Cheap Fashion*, have highlighted the social and environmental impacts of the industry. The following section will briefly discuss these impacts, the methods the industry has used to address them, and why these methods fall short of achieving lasting change. This discussion illustrates the need for sustainable business model innovation within the fashion industry.

2.1.1 Social and Environmental Issues

Growth in apparel and footwear consumption has taken a serious toll on the environment. The Global Fashion Agenda and Boston Consulting Group's *Pulse of the Fashion Industry 2017* report estimated that the industry's 2015 environmental impacts equaled 79 billion cubic meters of water, 92 million tons of waste produced, and 1,715 million tons of CO₂ emitted. These values were each projected to grow by at least 50% by 2030 (Pulse, 2017). These environmental costs directly affect entire communities, especially those in developing countries – whether that is producer nations that are exposed to the immediate environmental impacts of production, or the recipients of clothing waste from developed countries. The value of the global used clothing trade reached \$3.7 billion in 2016, an increase of 106% from 2006 (Brady & Lu, 2018). This trade has been a major hindrance to economic advancement in less developed countries, since used clothing is often cheaper and of higher quality than what can be produced domestically (Brady & Lu, 2018).

The downward pressure on suppliers has also created working environments that foster a slew of labor issues. One driving assumption within the fashion industry

is that “labor costs must be kept as low as possible in order to produce garments at competitive prices” (Distler et al., 2014, para. 1). This means production moves to new countries to take advantage of cheaper labor – the primary target for cost improvements in the supply chain (Distler et al., 2014). Retailers’ modular supply chain structure, which reduces their risk and increases their flexibility, creates a highly competitive environment that “usually drives suppliers toward lower wages and sweatshop-like labor [and] environmental standards” (Lim & Phillips, 2008, p. 143). This results in forced labor, child labor, excessive overtime, failure to pay at least a minimum wage, and other labor issues.

Industry Attempts to Address Impacts

In the 1990s, media exposure of poor working conditions and environmental degradation sparked a series of attempts by brands and retailers to address the negative impacts of apparel production. Initially, companies adopted a defensive position by attempting to distance themselves from these impacts and deny their responsibility. In response to mounting pressure from diverse stakeholder groups, however, retailers began working to reform the industry (Dickson, 2013). The most widely used methods include buyer codes of conduct and monitoring of supplier facilities.

A code of conduct is a written set of standards that lays out a brand or retailer’s expectations for its contractors (Dickson, 2013). The first brand credited with developing a code of conduct was Levi Strauss & Co. (Dickson et al., 2009). In response to negative press about the fashion industry’s supply chain, a broad set of stakeholders pushed brands and retailers to adopt a base set of labor and environmental standards (Dickson et al., 2009). This pressure led to a fragmented

response, in which companies developed standards individually rather than developing an industry-wide standard. Leading codes followed international standards and covered five major issues: the use of forced or underage labor, working conditions, employee rights, monitoring of supplier compliance, and enforcement (Dickson et al., 2009). Environmental codes were largely based on lifecycle assessments, which evaluate the impacts of a product at every stage of its lifecycle (Dickson et al., 2009).

Codes of conduct were an important first step on behalf of brands and retailers, yet they were not sufficient to remedy the problems within the supply chain. Early codes lacked operational detail, leading to inconsistent interpretation and implementation (Dickson et al., 2009). Without proper management systems in place to assure the codes were being followed, the codes were largely unenforced and yielded little positive impact on workers' lives (Dickson et al., 2009). Furthermore, brands and retailers were the sole authors of these codes – suppliers did not have the opportunity to provide input. Frenkel and Scott (2002) have since revealed that successful implementation of codes of conduct relies on reciprocal supplier participation in the development of the code. The multi-tiered supply chain structure is another obstacle to implementation: as the organizational distance between the lead firm and its supplier increases, the relevance of the lead firm's code of conduct decreases (Awaysheh & Klassen, 2010, p. 1262). Overall, codes of conduct were unsuccessful because they attempted to mandate compliance to social and environmental standards, meanwhile suppliers' performance continued to be judged solely on price, quality, and delivery (Lim & Phillips, 2008).

As it became clear that codes of conduct needed to be supplemented with mechanisms for implementation, brands and retailers turned to monitoring. This

became the primary strategy to assess a supplier's compliance with the stated codes (Dickson, 2013). Monitoring can be conducted by a brand or retailer's own employees or by a third party firm, and consists of a document review, site inspection, and interviews (Dickson, 2013; Dickson et al., 2009). These activities are beneficial because they create baseline information against which progress can be tracked over time (Dickson et al., 2009). The industry quickly became heavily reliant on monitoring, often publishing external reports to demonstrate its efforts to address the problems it uncovered.

As with codes of conduct, monitoring was not able to solve the industry's social and environmental issues. Monitoring visits were often superficial: they lacked thoroughness and were not accompanied by follow-up visits to correct problems (Dickson, 2013). Workers were generally excluded from the monitoring process, even though they were the intended beneficiaries of monitoring visits (Dickson, 2013). Since monitoring visits were based on individualized company codes of conduct, small differences between codes led to inefficiencies for suppliers (Dickson et al., 2009). Companies mainly focused on their Tier 1 suppliers, ignoring the more opaque layers of their supply chains (Dickson et al., 2009).

In recent years, codes of conduct and monitoring have been supplemented by corporate social responsibility (CSR). CSR generally involves community involvement, philanthropy, or even the redesign of corporate facilities to make them more environmentally friendly (Dickson et al., 2009). These efforts, however, rarely relate directly to the core of a brand or retailer's business. By 2003, the World Bank was questioning the ability of CSR to deliver further improvements in sustainability performance, saying the current system of implementation may have reached its limits

(Van Bommel, 2011). The primarily cosmetic nature of CSR has been critiqued by Porter and Kramer, who claim “the prevailing approaches to CSR are so fragmented and so disconnected from business and strategy as to obscure many of the greatest opportunities for companies to benefit society.” (2006, p. 80). Without evaluating the essential elements of a company’s business – the value it creates and the impact of its operations – and strategically choosing which social or environmental problems to tackle, the company will not achieve any meaningful social impact (Porter & Kramer, 2006).

Despite the use of codes of conduct, monitoring, and CSR, the net result is that supplier firms still do not fully understand the benefits of upgrading their social or environmental performance (Park & Dickson, 2008). Workers are no more knowledgeable about their rights, and suppliers do not enjoy economic gains by making improvements to their operations (Dickson et al., 2009; Gimet, Guilhon, & Roux, 2015). As long as supplier performance continues to be judged on price, quality, and delivery time, these are the areas to which suppliers will devote their resources (Lim & Phillips, 2008). With current pressure to meet retailers’ demands for lower costs, suppliers typically do not have the bandwidth to pursue activities that do not directly contribute to their bottom line.

Suppliers are not the only ones confronted with financial challenges: brands and retailers have recently faced significant disruption to their concept of ‘business as usual’ – a problem that the current model of chasing cheaper labor does not seem to be fully capable of fixing. The following section explores the financial state of the fashion industry and various trends that will continue to affect industry performance.

2.1.2 Financial Health of the Industry

Social and environmental concerns aside, the fashion industry is not healthy from a traditional financial perspective. Between the emergence of the fast fashion model, the rise of e-commerce, the explosive growth of off-price retail, and the introduction of social media as a sales and marketing tool, the industry's every weakness has been exposed and amplified (Clark, 2017). Traditional fashion cycles are collapsing as the need for speed to market and supply chain agility eclipse retailers' decision-making – a problem that is compounded by “an increasingly fickle consumer market” (Distler et al., 2014, para. 8). With a compressed timeframe between the emergence of a trend and mass dissemination, retailers are scrambling to understand a consumer who is showing less of a preference for spending on material goods (Distler et al., 2014). In January 1990, American consumers spent 5.2 percent of their overall expenditures on clothing and footwear; by January 2017, this number had dropped to 3 percent (Associated Press, 2017, para. 10).

The answer for retailers, so far, has been to place more orders: in fact, global clothing production doubled between 2000 and 2014 (M. S. L. J., 2017). However, this growth in supply has not been matched by comparable growth in consumer demand. Although there is an oversupply of clothing products, consumers remain dissatisfied with the options – a mismatch that suggests there is “a systemic problem in the way businesses decide on the apparel styles and the quantity produced to meet their customers' needs and buying habits” (Dickson et al., 2009, p. 264). This has led to a reliance on markdowns and promotions, decreasing retailers' profit margins as they attempt to clear through their glut of inventory. Macy's CFO Karen Hoguet illustrated this reality, saying, “Customers typically don't need most of what we sell, and there is a psychology that loves that promotion” (Gustafson, 2017, para. 9). As e-

commerce and off-price retail have captured consumers' attention, traditional retail stores have been forced to reset: nearly 7,000 stores closed and 662 retailers filed for bankruptcy in 2017 (Isidore, 2017).

Looking forward, the problems that have plagued the fashion industry are on track to intensify, not dissipate. A further reduction in the physical retail footprint is predicted, as well as the transformation of the physical store “from being a distribution channel to that of a platform for discovery, engagement, experience, and interaction” (Shaping, 2017, p. 4). On the supply side, cheap labor is becoming increasingly scarce (Distler et al., 2014). As labor costs continue to rise across Asia, the traditional response has been to move production to lower-cost countries; however, moving to countries that lack skilled labor and quality infrastructure comes with sizeable consequences. Production inefficiency, lack of transparency, and the increased time required for logistics will begin to offset labor cost advantages (Distler et al., 2014). In addition to labor costs, energy and material costs are on the rise (Pulse, 2017). Based on available data, the Global Fashion Agenda and Boston Consulting Group anticipate fashion brands' earnings before interest and taxes (EBIT) margins to decrease more than three percentage points by 2030 if they continue on their current trajectory (Pulse, 2017). The State of Fashion 2019 report suggests self-disruption will be a major industry trend, saying, “It will be increasingly important to adopt agile ways of working and depart from the traditional operating model” (The State, 2018, p. 73).

Technological advancements will also continue to disrupt the industry's concept of ‘business as usual.’ The 2017 World Economic Forum report highlights eight technologies that are expected to disrupt retail within the next decade, including, for example, the Internet of Things, artificial intelligence, digital traceability, and

Blockchain. These developments will continue to expose the retailers who choose to adhere to legacy technologies by accelerating their decline (Kestenbaum, 2017; Shaping, 2017). In the face of rising material input costs, some retailers have chosen to forgo technological upgrades and instead cleave to old ways of working: namely, chasing ever-cheaper labor to release some of the growing pressure on their profit margins. This practice affects the financial health of the entire supply chain: brands and retailers use their market power to exert downward pressure on their suppliers and achieve lower costs for their products (Park & Dickson, 2008). If this cycle continues, both retailers and suppliers will suffer: retailers will jump from country to country in pursuit of temporary labor cost advantages, while suppliers will be forced to operate on exceedingly slim margins in an attempt to keep retailers' business.

2.1.3 Fashion Industry Summary

The fashion industry currently finds itself up against a wall – three walls, to be exact. Social, environmental, and financial issues plague retailers and their suppliers, and current trends do not signal relief to be forthcoming. Both the way these businesses operate and the structure of the value chain that connects them need to be critically examined. Labor rights violations, environmental degradation, and deflating profit margins are symptoms of larger systemic issues within the industry. In order to tackle the root causes of these issues, it is necessary to understand the underlying components of the fashion business model and how innovation can be used to promote social, environmental, and financial sustainability within the fashion industry. Together, these needs are captured in the concept of sustainable business model innovation.

2.2 Business Models

In order to research sustainable business model innovation, it is important to first break the concept into smaller pieces. Since sustainability and business model innovation have only recently converged in the literature, these topics will be covered separately at first. Once a foundation for each individual concept has been established, sustainable business model innovation will be discussed to explore how these separate streams of literature have been combined. The following sections serve to define and clarify the most basic element of sustainable business model innovation: the business model itself.

2.2.1 Definition and Components

According to DaSilva and Trkman's (2014) review of business model literature, the first time 'business model' appeared in the title of an article was in 1960. For decades, however, the term remained latent. It wasn't until the emergence of Internet companies in the 1990s that the term became more commonly used among practitioners and academics across several fields (DaSilva & Trkman, 2014). Though business models have received widespread attention in recent years, the literature does not elevate one consistent definition of the concept. Dozens of definitions and component breakdowns exist (Zott & Amit, 2010; Magretta, 2002; Osterwalder, 2004; Teece, 2010; Boons & Lüdeke-Freund, 2013), but two theories provide some grounding for the term: the Resource-based View (RBV) and Transaction Cost Economics (TCE) theories (DaSilva & Trkman, 2014). RBV states that the firm is a bundle of resources and capabilities – business models, therefore, address the internal competencies of a firm that yield its competitive advantage (Barney, 1991; Morris et al., 2005). Meanwhile, TCE highlights the importance of transactions – without which,

customers would not receive any value from resources. Using these two theories as starting points, DaSilva and Trkman argue, “the core of a business model is defined as a combination of resources which through transactions generate value for the company and its customers” (2014, p. 383).

Some have described the business model as the architecture of a business (Teece, 2010; Rahbek et al., 2018). This metaphor is carried on by Clauss (2017), who defines the business model as a structural template for how the firm runs and develops its business. Both ideas suggest that the business model is not only an outline of the business in a holistic sense, but also a map of the internal configuration of business elements. These elements include: the benefit the business delivers to its customers (the value proposition), how it will organize to do so (value creation and delivery), and how it will capture a portion of the value it delivers (value capture; Teece, 2010).

Each dimension of value is comprised of underlying activities that are interconnected and interdependent (Clauss, 2017; Amit & Zott, 2012; Christensen et al., 2016). To depict these interdependencies, Christensen et al. (2016) developed a 4-box business model framework consisting of two types of capabilities (resources and processes) and two types of priorities (value proposition and profit formula). Within this framework, it becomes clear that the business model affords organizations the ability to operate in certain ways, but not in others (Christensen et al., 2016). This ‘activity system’ defines how a company interacts with stakeholders, which parties conduct which activities, and how those activities are linked to one another (Amit & Zott, 2012). Furthermore, the particular interdependencies among business model elements determine the upper limit to the company’s value capture potential (Amit & Zott, 2012). The business model, then, is more about how a firm does business – its

specific configuration of business elements – rather than about what the firm does (Amit & Zott, 2012; Clauss, 2017). For this reason, the business model is also described as the rationale or the logic behind a firm’s chosen configuration because it defines the benefit to the consumer, identifies target markets, confirms available revenue streams, and designs the mechanisms necessary to capture value (Rahbek et al., 2018; Teece, 2010).

There are 4 central pillars that make up any business model. Slight variations of the names for each pillar can be found throughout the literature – these are included in parentheses: Offer (Value Proposition), Customers (Customer Interface), Infrastructure (Supply Chain), and Financial Viability (Financial Model; Lüdeke-Freund, 2010; Osterwalder, 2004; Boons & Lüdeke-Freund, 2013). The ‘Offer’ encompasses the value embedded in the product or service. ‘Infrastructure’ refers to how upstream relationships are structured and managed, while ‘Customers’ applies to downstream relationships. Finally, ‘Financial Viability’ captures the costs and benefits of the first three pillars and their distribution across business model stakeholders (Boons & Lüdeke-Freund, 2013).

Osterwalder (2004) extends these four pillars into nine underlying building blocks, the core components of his Business Model Ontology. Originally, the nine blocks were: value proposition, target customer, distribution channel, relationship, value configuration, capability, partnership, cost structure, and revenue model. These blocks were later revised as the Business Model Ontology grew into the Business Model Canvas (BMC), a “shared language for describing, visualizing, assessing, and changing business models” (Osterwalder & Pigneur, 2010, p. 12). The new blocks are: customer segments, value propositions, channels, customer relationships, revenue

streams, key resources, key activities, key partnerships, and cost structure (Osterwalder & Pigneur, 2010). These blocks can be used to map out a company's business model regardless of company size or industry.

2.2.2 Business Model Development

Magretta declares, "Business modeling is the managerial equivalent of the scientific method – you start with a hypothesis, which you then test in action and revise when necessary" (2002, para. 16). Activity systems can be designed in a variety of ways, but they all contain three major elements: content (the selection of activities that are performed), structure (how those activities are linked), and governance (who performs the activities; Zott & Amit, 2010). A BM is made up of interdependencies among these three elements (Amit & Zott, 2012). During BM development, companies need to identify the needs of consumers and ask what activities are necessary to satisfy those perceived needs (content), how the required activities can be linked together (structure), and who is best equipped to perform each of those activities (governance).

According to Christensen et al. (2016), business model development follows a one-way, three-stage evolutionary journey. The first stage, creation, involves the search for a meaningful value proposition. During this stage, the firm is intently focused on discovering how to satisfy the unmet needs of potential customers – finding the perfect offer. The search for information dominates this stage and the business remains quite flexible to adapt to and incorporate new information. The second stage is sustaining innovation, which focuses on scaling operations to meet growing demand. The priorities shift to building and retaining a loyal customer base, as well as developing and implementing processes – both efforts serve to lock the

business model in place. The final stage, efficiency, is concerned with making operations run as smoothly as possible. At this point, the authors note, “deviations from the existing structure undermine the modularity of the components and reduce efficiency” (p. 35); therefore, the primary form of innovation is aimed at reducing costs and increasing efficiency. This further cements the business model in place, and the manager’s role shifts away from discovering the customer’s unmet needs to instead focus on maximizing shareholder value (Christensen et al., 2016).

Zott and Amit (2010) presented four interlinked value drivers for business models that can enhance their value creation potential. The first is novelty, or the degree of innovation embodied within the activity system itself. The second, lock-in, describes any business model activities that serve as incentives for business model participants to remain within the activity system. Complementarities refer to the value-enhancing effect of specific interdependencies within the activity system, without which there would be less value embedded in the final transaction. The final value driver is efficiency, or the cost savings within the interconnections of the activity system (Zott & Amit, 2010). These drivers not only increase the value potential, but also solidify the business model and validate its existence in the market by creating barriers to competitive threats.

Four key areas influence the development and maintenance of business models: market forces, macroeconomic forces, industry forces, and key trends (Osterwalder & Pigneur, 2010). Market forces include market segments, consumer needs and demands, and other issues directly affecting the available market for a company’s product or service. Macroeconomic forces zoom out from the individual market to encompass global market conditions, economic infrastructure, commodities,

and other resources. Industry forces consist of value chain participants, stakeholders, incumbents and new entrants, and substitute products or services. Finally, key trends could be technological, regulatory, cultural, or socioeconomic (Osterwalder & Pigneur, 2010). Shifts in any of these four areas could have a direct impact on the business model, and therefore need to be continuously monitored. Interestingly, a business model created under one set of conditions may not be suitable any longer when those conditions change. For this reason, Teece claims, “A business model is provisional in the sense that it is likely over time to be replaced by an improved model that takes advantage of further technological or organizational innovations” (2010, p. 187). In other words, in order for companies to survive, their business models eventually need to evolve.

2.2.3 The Problem With ‘Business As Usual’

Returning to the “one-way, three-stage” journey of business model development noted above, Christensen et al. (2016) assert the need to transform business model creation from a one-time event into a repeatable process. The business model configuration needs to continuously adapt to changes in the external forces of the competitive environment (Teece, 2010). Without conducting regular checkups on the business model fit – even for competitive models that make sense in today’s environment – the company could eventually become obsolete (Osterwalder & Pigneur, 2010). Competitive advantages “tend to be absorbed by the market and competitors in the long run” (Teixeira & Werther, 2013, p. 339), and the business model is no exception: successful models are subject to imitation by competitors, or could become victims of disintermediation (the removal of intermediaries or middlemen in an economic transaction) by customers and suppliers (Teece, 2010).

Once a business model reaches the efficiency stage, the company also traps itself into competing solely on incremental improvements in cost and quality (Schlegelmilch et al., 2003). Within this race to the bottom, eventually there is no more room to improve – the only way out is to fundamentally change the way business is done (Schlegelmilch et al., 2003; Christensen et al., 2016).

Change is very difficult to accomplish from within current business models, as “they become less flexible and more resistant to change as they develop” (Christensen et al., 2016, p. 33). Over time, businesses’ problem-solving approaches become deeply ingrained as similar problems are confronted again and again – new solutions often are not considered or discussed (Christensen et al., 2016). The success of the established business model causes the development of cognitive barriers that strongly influence what information gets filtered out of corporate decision processes (Chesbrough, 2010). This filtering process keeps firms actionable in the midst of chaotic environments, but can also lead to blind spots as the market, macroeconomic, and industry landscapes change (Chesbrough, 2010). For example, Teece (2010) argues that when technology changes, it can potentially overturn what once was an established logic for satisfying consumer needs. Since the business model is the logic behind the configuration of business elements, technological changes might require entirely new business models (Teece, 2010). The incongruities with current business model logic mean that even successful models might need to be revamped or abandoned.

During the final stage of business model development, any deviation from the current business model structure reduces efficiency and, ultimately, shareholder value. The business develops highly specialized interdependencies that reduce the flexibility of the overall model and accelerate its progress towards current priorities (Christensen

et al., 2016). Therefore, managers pursue only those innovations that come with low risks, high returns, and quick paybacks – any innovations that do not naturally build upon the current model are not likely to be considered (Christensen et al., 2016). The narrow focus on shareholder value guides the firm's decisions at this stage.

Ironically, however, Hart and Milstein (2003) caution against the efficiency approach and assert that without a broader innovation focus, it will be very difficult for the firm to create the new value propositions necessary to ensure future profitability. They argue, “The creation of shareholder value thus depends upon the firm's ability to creatively destroy its current capabilities in favor of the innovations of tomorrow” (Hart & Milstein, 2003, p. 58). Avoiding this reality, according to Christensen et al., could be “the greatest innovation risk a company can take” (2016, p. 40). Future survival, they continue, is a matter of “decoupl[ing] the company's future from that of its current business units” (2016, p. 40). This, in essence, is the rationale behind business model innovation.

2.3 Business Model Innovation

Business model innovation (BMI) is a relatively recent term – it was first used in an article title in 2000 (Malhotra, 2000). Scholars have also used the term ‘strategic innovation’ to refer to the same concept (Markides, 1997; Schlegelmilch et al., 2003). The following section explores several definitions and components of BMI, as well as proposed implementation frameworks, common challenges that prevent successful BMI, and finally scholars' initial attempts at measuring BMI.

2.3.1 Definition

Business model innovation is the process of “developing new ways to capture, create, and deliver value” (Rahbek et al., 2018, p. 269) through “the discovery of a fundamentally different business model in an existing business” (Markides, 2006, p. 20). Such a transformation concerns the entire architecture of a company, rather than individual components (Rahbek et al., 2018). BMI goes beyond product or process innovation by re-conceptualizing the business model itself and thereby changing the nature of competition, either within an existing market or in entirely new markets (Schlegelmilch et al., 2003). For entrepreneurial firms this means designing novel business models; for incumbents it means reconfiguring existing models (Schneckenberg et al., 2016). Though BMI can occur in a variety of ways, it involves systemic and holistic thinking in order to change the content, structure, and governance of the company’s business model (Amit & Zott, 2012). BMI requires breaking out of the ‘efficiency’ mindset and centering the firm’s strategic thinking on the customer rather than the competition (Schlegelmilch et al., 2003).

The literature has treated BMI as a continuum, ranging from minor incremental improvements of the existing business model to “more radical advances that fundamentally challenge predominant business models within the industry” (Rahbek et al., 2018, p. 269). Incremental improvements are those that build upon current offerings without making major changes in either internal competencies or external partnerships – the overarching structure of the business model remains the same (Rahbek et al., 2018). Laudien and Daxböck (2006) describe BMI as a trial-and-error process where a company arrives at more radical innovation through an emergent and incremental process of changing the business model. Based on Mitchell and Coles’ (2003) study of continuous BMI, Schaltegger et al. (2012) developed a typology

consisting of four degrees of BMI. The first is business model adjustment, involving changes to one or a minor number of business model elements while the value proposition remains unchanged. Second is business model adoption, where changes focus on matching competitors' value propositions and not falling behind. Third is business model improvement. In this case, substantial simultaneous changes to a major number of business model elements take place, though the value proposition remains unaltered. Finally, business model redesign occurs when improvements lead to a completely new value proposition and replace the underlying business logic (Schaltegger et al., 2012).

When comparing this typology with definitions of BMI, it appears that BMI is a process that moves through the first three degrees of innovation and culminates in complete business model redesign. In Schneckenberg et al.'s definition, BMI "implies a *substantial change* of the firm's constitutive business model components" *including its value proposition*, value creation, and value capture (2016, p. 405). Or consider Clauss' (2017) definition: the innovation of a *system* of products, services, technology, and/or information flows, which results in changes in the three business dimensions of value creation, *value proposition*, and value capture. According to Markides (2006), BMI must enlarge the economic pie in order to qualify as an innovation – meaning new value has to be created. These definitions demonstrate that without changing the entire system – the logic of the business model – and developing a new value proposition, BMI has not occurred.

Unfortunately, the concept of 'business model innovation' has become both too broad and too vague, in practice and in literature: "Currently, business model innovation is often used by consulting companies for marketing changes that rarely go

beyond a ‘simple’ process improvement” (DaSilva & Trkman, 2014, p. 387). While the term ‘innovation’ on its own can certainly be applied to a range of improvements, ‘business model innovation’ has been incorrectly applied to incremental changes that do not touch the underlying business logic of an organization. Multiple studies correctly assert that BMI results in new product or service offerings that were not previously available (e.g. Mitchell & Coles, 2003), or in a traditional product or service becoming attractive to a different customer than before (Markides, 2006), but each of these changes on its own does not necessarily mean BMI has occurred. Even a business model replacement (changing the majority of business model elements) does not automatically constitute BMI if no new value proposition is created (Mitchell & Coles, 2003).

For this reason, this study utilizes Clauss’ definition of BMI because of its focus on the activity system that makes up a firm’s business model, its requirement that changes occur in each of the three value dimensions, and its perspective of the firm as a participant in a larger system of “products, services, technology, and/or information flows” (2017, p. 387). This systems-level perspective becomes paramount when discussing the transformation from traditional BMI to sustainable BMI.

2.3.2 Rationale: Why BMI is Necessary

According to Mitchell and Coles’ annual study of 100 public companies with the fastest growing stock prices, they found the following:

Perennial top performers were frequently making fundamental improvements in several dimensions...of their business models at once for serving their customers, end users, and other important stakeholders...The most effective

companies were making these multidimensional business model shifts every two to four years (2003, p. 15-16)

Compared with product and process innovation, BMI provided these companies with a more enduring competitive advantage. While competitors can quickly match new product or service offerings, it is much more difficult to imitate or replicate an entire activity system (Amit & Zott, 2012). In addition, “most companies in an industry are pursuing the same business models and ways of making them more efficient” (Mitchell & Coles, 2003, p. 19). Instead, BMI “can either create a new market or allow a company to create and exploit new opportunities in existing markets” (Amit & Zott, 2012, p. 44).

Rather than competing in a race to the bottom, firms that pursue BMI can break out of this competitive trap and overcome their competitors’ advantages (Mitchell & Coles, 2003). New entrants can topple incumbents that are stuck in ‘business as usual’ thinking, and established firms can address competitive threats that come from outside the industry’s boundaries (Amit & Zott, 2012). BMI is what enables firms to locate sources of future value and take advantage of new technologies that may be incompatible with traditional business models (Chesbrough, 2010). Rather than attempting to wring as much as possible from current sources of revenue, “A convincing growth trajectory requires either that the firm offer new products to existing customers or tap into previously un-served markets” (Hart & Milstein, 2003, p. 58). Doing so requires BMI.

2.3.3 Implementing BMI

Designing and implementing a new business model “is a function of an organization’s strategy at a given period in time” (Khanagha et al., 2014, p. 337).

Disruptive BMI is especially advantageous in at least three circumstances: when a firm is entering a new market where entrenched competitors have a first mover advantage, when the current strategy or business model is no longer appropriate and the firm is facing a crisis, and when the firm is attempting to scale up a new-to-the-world product to make it available to the mass market (Markides, 2006). Depending on the context, Khanagha et al. (2014) proposed three strategic intents firms generally adopt when they determine how to approach BMI. The most basic strategy is incremental evolution. This strategy is popular among incumbent firms as they retain the resources and capabilities of the existing model and minimize the costs of transition. Meanwhile, they try to incorporate new elements without damaging the ongoing business. If the firm is open to greater levels of experiential learning, it might take on a directed transformation strategy. Within this strategy, the firm continues using the existing means of value creation while also trying to acquire or develop new ones, planning to fully incorporate the new means at some point in the future.

If, however, the firm's strategy is radical substitution, it will be expressly focused on acquiring new capabilities to eventually replace the existing model (Khanagha et al., 2014). This focus acknowledges that full-scale BMI requires new activities on the part of the firm – activities that are likely incompatible with the traditional business logic, and, therefore, the traditional business model (Markides, 2006). It is important to echo DaSilva & Trkman's (2014) callout regarding the distinction between a firm's strategy and its business model: "Strategy reflects what a company aims to become, while business models describe what a company really is at a given time" (p. 383). Clauss' review of literature revealed "most recent studies agree that strategy and the business model are distinct and should be considered separately"

(2017, p. 387). Any one of the above strategies for pursuing BMI can eventually result in new business models, though the time this transformation takes and the means for achieving it may differ. Likewise, each of these strategic intents can fall short of BMI. A firm may intend to pursue BMI, but blind spots, including internal and external factors, may hinder their success. Implementing BMI, therefore, is a process that moves beyond strategic thinking and requires firms to take concrete steps toward transformation.

Research conducted by Laudien and Daxböck (2006) suggests that even the most radical forms of BMI follow an emergent process consisting of four phases. Phase I involves monitoring the business model fit beyond the industry level. Firms need to analyze developments within the broader business ecosystem – either on their own or with the help of their networks – in order to be aware of a misfit in their own model. Although incumbents have little incentive to adopt new business models (due to entrenched investments in the current model), at some point they will need to respond to market disruption (Markides, 2006). Even if incumbents do not end up adopting the new model, they need to be paying attention to how the market is changing and assessing their capacity to remain competitive.

One area firms need to constantly monitor is technology – even if the budding advancements originate outside their particular industry. Translating technological success into commercial success requires a business model to define the value proposition and value capture mechanisms (Teece, 2010). New technology, therefore, will require a new business model if the technology doesn't fit within the established business logic. In fact, “the more radical the innovation, and the more challenging the revenue architecture, the greater the changes likely to be required to traditional

business models” (Teece, 2010, p. 186). Within the fashion industry, for example, e-commerce has added completely new opportunities for reaching customers that were not previously accessible through traditional networks of brick-and-mortar stores. For this reason, firms in Phase I need to anticipate changes coming from beyond the borders of their industry as these will cause the greatest shift in the established architecture.

Phase II is business model development, beginning with the redesign of single business model components (Laudien & Daxböck, 2006). During this phase, the overall business model remains stable and the core business is unchanged. Usually this takes the form of minor adjustments to the value creation or value delivery dimensions. These smaller changes are important, as “completing at least one emergent process round is a prerequisite for acquiring the capability to deliberately pursue business model innovation” (Laudien & Daxböck, 2006, p. 427). The experimentation and learning that takes place in Phase II prepares the firm to move toward Phase III: open innovation. By this point, the firm has realized that further gains can be achieved by building upon the changes made in Phase II. The firm also comes to understand that in order to do so, it will need the help of its network partners to overcome limitations. This is a critical space: firms either choose to push forward into Phase IV, or cling to the remnants of ‘business as usual.’ Exiting the innovation process at Phase III “is a deliberate step that results from a lack of managerial foresight and a so-called status-quo bias” (Laudien & Daxböck, 2006, p. 428). These firms stop short of developing BMI capability, and BMI fails to completely overtake the traditional way of competing (Markides, 2006).

If firms move on to Phase IV, deliberate BMI, their efforts result in new-to-the-industry business models (Laudien & Daxböck, 2006). Firms in this stage scrutinize the business model development process, arrive at a new understanding of how business models work, and are able to innovate their model in a proactive way. Beyond this, Phase IV firms are more deeply embedded in their networks, providing them with greater access to information about the business ecosystem and signaling a greater willingness to collaborate with network partners. These changes help firms better evaluate opportunities and threats and also reduce the likelihood that firms will be crippled by changes in the external environment.

Laudien and Daxböck (2006) studied average market players and found that, in general, they do not actively pursue BMI when entering the above four-phase process. These firms might solely be seeking the benefits from incremental changes to their products, services, or processes. In this scenario, the firm moves through the phases as noted by Laudien and Daxböck (2006), becoming increasingly aware of the opportunities provided by complete BMI. However, this is not the only way to achieve BMI: for example, if a firm intends to pursue radical business model substitution, it may choose to incorporate open innovation and to deeply embed itself in its network from the beginning. While successful BMI does not require moving through Laudien and Daxböck's (2006) process chronologically, the phases are included in this study because they illustrate a firm's increasing awareness of what separates successful BMI from mere product, service, or process innovation. It is important to take note of this distinction so that the defining elements of BMI can be included in the measurement scale.

2.3.4 Challenges

Despite having intentions of pursuing full-scale BMI, many firms fail to bridge the gap between designing innovative business models and successfully implementing them (Geissdoerfer et al., 2017; Gilbert, 2005; Markides, 2006; Teece, 2010). For this reason, Geissdoerfer et al. (2017) developed the Cambridge BMI Process, a series of eight iterative steps to help firms identify holes in their concept design, piloting plans, and implementation strategies. However, even seemingly foolproof plans can succumb to problems related to organizational inertia, uncertainty and ambiguity, and tensions between managing today's business and creating tomorrow's opportunities. To better understand common pitfalls of BMI and how firms can overcome them, each of these challenges will be discussed in turn.

Organizational Inertia

During the efficiency stage of business model development (Christensen et al., 2016), "it seems as though becoming more efficient with an existing business model tends to increase the inertia around maintaining that existing model" (Mitchell & Coles, 2003, p. 19). Organizational inertia is a problem experienced by incumbent firms, characterized by the inability to enact internal change in the face of significant external change (Gilbert, 2005). Teece states, "inertia is likely to be considerable" (2010, p. 187) since changing the business model requires changing the paradigm by which the firm goes to market. Inertia stems from two sources of rigidity: resource rigidity and routine rigidity (Gilbert, 2005). Resource rigidity refers to a failure to change resource investment patterns as well as external resource providers, as these choices "shape and constrain...internal strategic choices" (Gilbert, 2005, p. 742). Rigid firms are unwilling to invest in new resources or capabilities when such

investments don't fit with existing markets or would affect the firm's dominant market power (Gilbert, 2005). Instead, firms focus on driving down costs and growing topline sales – as is the case in the fashion industry today.

The second type of rigidity is routine rigidity: the failure to change the organizational processes that use the previously mentioned resource investments (Gilbert, 2005). Recall the second phase of business model development when processes develop to lock the business model in place (Christensen et al., 2016). This is when the business model becomes self-enforcing as “repeated patterns of response involving interdependent activities...become reinforced through structural embeddedness and repeated use” (Gilbert, 2005, p. 742). As Chesbrough (2010) noted, the cognitive filters a firm develops in this phase help the firm remain actionable in chaotic environments, but they also create blind spots. The focus on exploiting current processes drives out exploration processes, which makes it very difficult for firms to develop new capabilities (Gilbert, 2005). Without this ability to adapt, firms are more likely to perceive external changes as threats rather than opportunities, and to address these threats with a contraction of authority, a reduced level of experimentation, and “a focus on existing resources that amplifies routine rigidity” (Gilbert, 2005, p. 749).

Uncertainty and Ambiguity

Regardless of the context, BMI creates ambiguity and risk for decision-making (Schneckenberg et al., 2016). Two sources of uncertainty include computational complexity (the large number of possible business model configurations) and dynamic complexity (the multiple non-linear interdependencies between business model components; Massa & Tucci, 2013). This lack of clarity about the way forward

requires “a commitment to experimentation” (Chesbrough, 2010, p. 359), which is extremely difficult to establish – especially for incumbent firms that struggle with organizational inertia. Furthermore, “emergent opportunities typically lack the deep wealth of data that are used to justify corporate actions in the mainstream business” (Chesbrough, 2010, p. 361). BMI requires venturing into uncharted territory, where companies cannot rely on the relics of past success. Since contextual uncertainty is an inherent part of BMI, firms need strategies to cope with these changes. Schneckenberg et al. (2016) found that “coping mechanisms vary contingent on which business model component is reconfigured” (p. 415). This means firms need different ways to cope with the uncertainty they experience when making changes to their value creation, value proposition, and value capture logic – further complicating the BMI process.

Another important characteristic for firms pursuing BMI is resiliency: a culture characterized by anticipatory and repeated innovation (Teixeira & Werther, 2013). In a world where the rate of change is accelerating, resilient firms are those that maintain above-average returns “even after absorbing the shocks of the competitive environment” (Teixeira & Werther, 2013, p. 335). These firms anticipate change and willingly engage in internal creative destruction because they recognize that current business model configurations must change in order to survive (Teixeira & Werther, 2013). Resiliency enables firms to view external changes as opportunities rather than threats, a distinction that unlocks organizational inertia and motivates change (Gilbert, 2005). Anticipatory environments are those with an open organizational culture where experimentation and learning are encouraged, innovation is valued and expected, and ‘better’ is sought out externally rather than internally (Teixeira & Werther, 2013).

Most importantly, resilience is not a one-time act but rather a habitual practice – recall Mitchell and Coles’ (2003) findings that the most successful companies were revamping their business model *every two to four years*. Confronting ambiguity on such a regular basis means resiliency needs to be so embedded in the firm’s culture that it is more deeply engrained than the business model itself. In fact, Teixeira and Werther (2013) assert, “A resilient organization may be the only source of sustainable competitive advantages in an increasingly competitive world” (p. 339). Resilient organizations reach a point where innovation is no longer their principal goal, but a byproduct of their culture and processes (Teixeira & Werther, 2013). Innovation becomes the firm’s way of life – its version of ‘business as usual’ – and represents the very core of its growth strategy (Teixeira & Werther, 2013).

Today vs. Tomorrow

When pursuing BMI, incumbent firms generally do not have the luxury of abandoning their existing model and starting fresh. Instead, ‘business as usual’ thinking plagues them: they are tied down by the processes and routines they have developed, the resources and partnerships in which they have invested, and the underlying configuration of interdependencies they have nurtured (Schaltegger et al., 2012). Realizing short-term results and generating expectations for future growth require both protecting current capabilities and infusing the firm with new perspectives and knowledge (Hart & Milstein, 2003). This is extremely challenging: there is a disconnect between the BMI being pursued and the current priorities of the existing model, meaning they do not easily coexist within the same organization (Christensen et al., 2016; Markides, 2006). When pursuing BMI, firms actually need

to maintain a variety of innovations at once (O'Reilly III & Tuchman, 2004). The first is incremental innovation, or small improvements to current operations so the firm can deliver greater value to existing customers. The second is architectural innovation, in which process advances change more fundamental elements of the business model. Finally is discontinuous innovation: radical advances that alter the basis for competition and might even render old methods obsolete (O'Reilly III & Tuchman, 2004).

Christensen et al., (2016) caution that as business model development progresses, “the ability to create new businesses within existing business units is lost...specialized capabilities that are highly valuable to [the] current business model will tend to be unsuitable for, or even run counter to, the new business model” (p. 37-38). It is often preferable for companies to use structural differentiation to decouple the parent organization's threat perception from the new venture's opportunity perception (Gilbert, 2005). This is what O'Reilly III and Tuchman (2004) call an ‘ambidextrous organization’: one in which new exploratory business units have enough separation from the traditional units to allow for new processes, structures, and cultures to develop, while maintaining tight links across the units at the executive level. In their study, ambidextrous organizations had over a 90% success rate in creating their desired innovations while also maintaining current performance (O'Reilly III & Tuchman, 2004). The separation freed the exploratory units from organizational inertia and rigidity, but also allowed them to benefit from the resources available to the parent organization: it allowed cross-fertilization but prevented cross-contamination (O'Reilly III & Tuchman, 2004).

Each of these challenges provides insight into the components that contribute to successful BMI. Therefore, a measurement scale should encompass the aforementioned capabilities that prevent organizations from succumbing to common hurdles. However, additional obstacles exist for companies pursuing sustainable BMI. For this reason, this study cannot solely rely on business literature but must now turn its focus to the study of sustainability.

2.4 Sustainable Development

As usage of the term ‘sustainable development’ has increased dramatically in recent years, the term itself has become an ambiguous catchall category with no clear definition (Pesqueux, 2009). Today, sustainable development is treated primarily as a management issue with strong political connotations (Pesqueux, 2009). For this reason, it is necessary to trace sustainable development back to its origin in order to understand its original intended meaning. Understanding the development of this term will provide insight into its ultimate convergence with the concept of BMI.

2.4.1 Definition and Origin: The Brundtland Report

In 1983, the United Nations General Assembly established a special commission to create “a global agenda for change” (World Commission, 1987, p. 5). The resulting report, “Our Common Future” (also known as the Brundtland Report), proposed a long-term agenda for global action toward a sustainable future. The 300-page report has since served as the foundation for the concept of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission, 1987, p. 41). Others have since elaborated upon this definition: for example, Hart and

Milstein (2003) define sustainable development as “a process of achieving human development...in an inclusive, connected, equitable, prudent, and secure manner” (p. 56). That being said, the Brundtland report is commonly recognized as the basis for this concept (e.g. Lüdeke-Freund, 2010; Stubbs & Cocklin, 2008) and will be treated as such throughout the present study.

In light of modern tensions between economic development and social and environmental sustainability, it is interesting to note the Brundtland Report’s conviction that economic growth and sustainable development are inextricably linked. Sustainable development does imply limits – the effects of human activities must not grow beyond the ability of earth’s biosphere to absorb them – but these limits are not absolute (World Commission, 1987). Moving beyond present constraints to meet essential needs will require ingenuity and innovation, two ingredients that also have the power to usher in “a new era of economic growth” (World Commission, 1987, p. 16). The goal of sustainable development is not to reach a fixed state where economic growth is stagnant, but rather to engage in a process of change “in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs” (World Commission, 1987, p. 17). Since ‘the needs of future generations’ is a dynamic concept, facing future challenges means innovation and sustainability need to develop in conjunction with one another (Bossle et al., 2016).

Following the presentation of the Brundtland Report, the UN developed seventeen Sustainable Development Goals (SDGs). The Brundtland Report acknowledges several challenges that have made, and will continue to make, implementation of these goals very difficult. The SDGs require the integration of

economics and ecology, but this poses problems since “those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy” (World Commission, 1987, p. 17). This results in what Lovins and colleagues describe as a “dangerously narrow focus,” in which “industries look only at the exploitable resources of the earth’s ecosystems...and not at the larger services that those systems provide for free” (1999, p. 146). Incomplete accounting of natural resources means companies often earn income from natural resources while simultaneously damaging the ecosystem’s ability to carry out its other functions (World Commission, 1987; Lovins et al., 1999). Progress toward sustainable development, therefore, will “require a fundamental shift in the purpose of business and almost every aspect of how it is conducted” (Bocken et al., 2014, p. 43).

Without mentioning BMI explicitly, the Brundtland Report strongly asserts that ‘business as usual’ will not be capable of bringing about sustainable development. Companies will need to operate in new ways, critiquing their underlying assumptions about an organization’s role in society and expanding the scope of their focus to include the system in which they operate. To do so, however, necessitates the creation of new guiding frameworks to help businesses progress toward a sustainable future. The next section discusses the evolution of sustainable development frameworks toward becoming practical business tools that aid in the implementation of the SDGs.

2.4.2 Operationalizing Sustainable Development

In the years since the Brundtland Report was published, many scholars have studied the impact of business on Earth’s subsystems. More recently, research has attempted to bridge the gap between scientific sustainability principles and traditional

business logic. Rather than reaffirming what is wrong with the way firms currently operate, scholars have sought to integrate sustainability principles into business model frameworks and identify actionable steps firms can take in their pursuit of sustainability. By translating sustainability into a language that businesses understand – the three major business model components – business leaders can pinpoint elements of their operations that are incompatible with sustainability goals. This vein of sustainable development literature dates back to the work of Dr. Karl-Henry Robèrt and his non-governmental organization (NGO), The Natural Step.

The Natural Step

In 1989, Robèrt founded The Natural Step (TNS) to help companies move toward strategic sustainable development. The TNS framework proposes the use of a metaphorical funnel to signify society's awareness of the problem of non-sustainability (Robèrt, 2000). The goal in this model is to avoid the walls of the funnel: unsustainable practices contribute to its narrowing, while sustainable practices move society toward its opening (Robèrt, 2000). Achieving this goal requires that society lives within the boundaries of four system conditions – basic conditions that make it possible for the Earth to sustain human activity. These conditions state that the Earth must not be subjected to the following: increasing concentrations of substances extracted from the Earth, increasing concentrations of substances produced by society, physical impoverishment by ecosystem manipulation, and unfair or inefficient use of resources to meet basic needs worldwide (Robèrt, 2000).

The final component of the TNS framework is a strategy for avoiding the walls of the funnel. In its work with companies, TNS encourages a whole-systems approach

to help employees envision a sustainable future for the organization (thenaturalstep.org). Next, companies use a process called backcasting: they conduct a sustainability gap analysis to see the difference between the organization's sustainable future and its current activities (thenaturalstep.org). Finally, the company develops creative and innovative solutions to achieve both short-term and long-term priorities (thenaturalstep.org). An important element of these solutions is upstream thinking, which encourages companies to remove the underlying source of their sustainability problems rather than simply addressing the symptoms of those problems (Robèrt, 2000). TNS employed this process with Nike from 1998-2001 and again in 2008 – their work resulted in Nike's North Star vision and innovation goals (thenaturalstep.org).

Eventually, Robèrt's work with TNS evolved into its own framework, offering "basic social and environmental principles for sustainability and guidance for how to strategically and systematically apply them" (Kurucz et al., 2017, p. 190). This new framework, the Framework for Strategic Development, builds upon the work of TNS by providing companies with more practical guidelines for how to avoid the walls of the funnel.

Framework for Strategic Sustainable Development

The Framework for Strategic Sustainable Development (FSSD) couples sustainability principles with "a planning mechanism for their application" (Robèrt et al., 2013, p. 2). This translation of sustainability into business terminology consists of five hierarchical levels: systems, success, strategy, action, and tools (Robèrt et al., 2013). Systems refer to the scope of the sustainability problem. By examining the

major functions of Earth's systems – and the human activities that contribute to its degradation (the narrowing of the funnel) – the need for the subsequent levels becomes readily apparent (Robèrt et al., 2013). Purpose is the overarching objective of sustainable development: sustainability. This step requires abiding by the four system conditions that define sustainable human activity. Strategy involves backcasting and upstream thinking in order to orient a firm's activities in such a way that it takes concrete steps toward the objective of sustainability. Action refers to the steps a firm takes, and tools are used to help organizations manage their journey toward sustainability. Many tools exist, such as Environmental Management Systems, Natural Capitalism, and Life Cycle Assessments (Robèrt et al., 2013; Lovins et al., 1999).

The FSSD advances the conversation of sustainable development beyond approaches that utilize purely scientific terminology. One such example of a scientific approach is the Planetary Boundary Approach (PBA), which identifies “metrics along nine boundary areas that will preserve conditions for human thriving” (Kurucz et al., 2017, p. 190). The PBA attempted to quantify these boundaries that, if crossed, could cause the Earth's subsystems to shift into a new state “with deleterious or potentially even disastrous consequences for humans” (Rockström et al., 2009, p. 472). The boundary areas include climate change, rate of biodiversity loss, interference with nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, change in land use, chemical pollution, and atmospheric aerosol loading (Rockström et al., 2009). These categories help define the components that make up the walls of the funnel in the TNS framework, so diverting human activities away from the boundary lines is what moves society toward a sustainable future.

The Global Fashion Agenda and Boston Consulting Group's *Pulse of the Fashion Industry 2017* report uses this boundary concept to depict the fashion industry's contributions to a selection of planetary boundaries. For companies, these boundaries represent business risks: each boundary comes with a potential threat of regulation, which would translate to a business cost if a company is not prepared. On the other hand, boundaries outline the direction that a company's sustainability efforts should progress. Using the boundaries as guidelines, companies can choose which areas to focus on and craft sustainability strategies to help move them in the right direction. In January 2019, international luxury group Kering partnered with the University of Cambridge Institute for Sustainability Leadership published a white paper titled "Linking planetary boundaries to business." The paper provides insight into how the planetary boundaries can be used to inform business decision-making, suggesting potential targets, data needs, and next steps for the business community (CISL, 2019). However, additional research is needed because "the PB [Planetary Boundary] framework is at a scale that is currently not designed to be applied directly to business" (CISL, 2019, p. 12).

There are several shortcomings with using a strictly scientific approach such as the PBA. First, the boundaries contain inherent uncertainties – the creators of the PBA admitted, "some of the figures are merely our first best guesses" (Rockström et al., 2009, p. 475). On top of this, the PBA is silent as far as social impacts, which do not have the same quantifiable indicators as environmental impacts. Second, there is no mention of the underlying mechanisms that move society toward these boundaries (Robèrt et al., 2013). For companies that have never quantified their environmental or social impacts, the PBA offers no insight for how to avoid contributing to these

boundaries. This leads to the third major challenge with the PBA: it offers no guidance to help companies make decisions that do not contribute to the aforementioned underlying mechanisms. In their critique of the PBA, Robèrt and colleagues commented, “The PBA does not automatically lead individual sectors or organizations to change or actions” (2013, p. 5). In the case of the Boston Consulting Group report, it is unlikely that companies will come away with a sense of urgency: there is a disconnect between the charts showing that four of the five boundaries captured in the report have been transgressed, and the day-to-day reality that businesses continue operating without any immediate obstacles because of those transgressions (Pulse, 2017).

For these reasons, the FSSD provides a more useful foundation upon which to discuss the development of sustainable business models because it moves the dialogue toward action and implementation. The FSSD can serve as a general guide to pursue sustainable development in a variety of institutional contexts, but by itself, the FSSD is not sufficient (França et al., 2017). For successful sustainable development to occur, the overarching strategies of the FSSD need to be coupled with sector-specific needs and tools – ones that speak in a language familiar to businesses (França et al., 2017). A prime example of the effort to merge science and business and help companies understand how to move toward sustainable development is the Future-Fit® Business Benchmark (F2B2).

Future-Fit® Business Benchmark

The F2B2 is a framework rooted in the UN SDGs that focuses on equipping and encouraging companies to tackle systemic issues (futurefitbusiness.org). From the

F2B2 website: “A Future-Fit® society will protect the possibility that humans and other life can flourish on Earth forever, by being environmentally restorative, socially just, and economically inclusive.” The benchmark identifies a set of Positive Pursuits, or activities that help advance society’s progress toward future-fitness. These efforts go beyond goodwill by only including those that make society more economically inclusive, socially just, or environmentally restorative (futurefitbusiness.org). The F2B2 starts with sustainability principles, such as the understanding that companies exist inside larger systems and do not stand alone, and provides tools for companies to understand the strengths and weaknesses of their business models within the context of these larger sustainability challenges.

A hallmark of the F2B2 is the 23 extra-financial break-even points, categorized by the stakeholder group for whom they are most relevant. The term ‘break-even point’ stems from the concept of a company’s bottom line; these points serve to extend the strategic focus of the firm beyond its past performance, sector standards, and short-term goals. Each goal comes with a series of key performance indicators (KPIs) to evaluate how far the company is from its future goals, as well as actionable guides with relevant questions to ask and suggestions for how to prioritize a company’s efforts. The F2B2 has so far been disseminated in the form of two releases: the first defined the ‘do no harm’ benchmark, while the second shifted from avoiding harm to assessing positive impact. While similar to the FSSD in terms of its starting point – identifying intended outcomes, or creating a vision of the company’s sustainable future – the F2B2 progresses toward action by incorporating stages for maximizing the chances of success, minimizing the chances of negative side effects, planning implementation, and assessing actual outcomes.

Lastly, F2B2 redefines business principles in such a way that they grow to encompass sustainability principles as well. Two examples include value and accountability. In the business world, the primary form of value is shareholder value: to grow shareholder value, companies privatize gains and externalize losses because only financial returns matter. While researchers have called for a move toward shared value (e.g. Porter & Kramer, 2011), the F2B2 cautions against this approach due to the concern that creating shared value leads companies to offset negative impacts by doing good, rather than properly internalizing those negative impacts. Instead, the F2B2 encourages companies to pursue system value, in which business contributes to future-fitness instead of hindering society's progress (futurefitness.org).

In addition, the F2B2 differentiates between two types of accountability: whole and mutual (F2B2, 2016, p. 22-23). Firms are wholly accountable for impacts within their direct control. These are impacts related to their operations or the design of their products. Mutual accountability refers to impacts outside a firm's direct control. These impacts are caused by the company's existence, but cannot be addressed by the company on its own. Such impacts call for partnerships with suppliers, customers, and employees in order to address root causes effectively. Distinguishing between whole and mutual accountability also calls attention to the impacts for which businesses do not traditionally account and extends their scope beyond 'business as usual' thinking. By redefining terms that are familiar to businesses, the F2B2 informs businesses about sustainability principles and directs them to resources already at their disposal in order to effect change.

The progression of sustainable development toward integration with business principles has helped to translate sustainability into concrete and actionable steps

businesses can take toward a sustainable future. This new direction, however, represents a significant shift away from traditional business logic. Changing the underlying logic necessitates a change in the BM; for this reason, it is pertinent to discuss how a sustainable BM is different from a traditional BM.

2.5 Sustainable Business Models

The Brundtland Report advised that truly sustainable development would require the integration of economics and ecology, which the authors warned would “require a change in attitudes and objectives and in institutional arrangements at every level” (1987, p. 55). Though there is no conceptual definition of a sustainable BM (SBM), several characteristics have been explored in the literature (Laukkanen & Patala, 2014). Broadly speaking, sustainable business thinking views business as a positive force that simultaneously “contributes to society and the environment while generating a profit” (Bocken et al., 2015, p. 68). In this model, none of the three components of sustainability is sacrificed: “sustainable organizations must make a profit to exist but they don’t just exist to make a profit” (Stubbs & Cocklin, 2008, p. 121). Economic, environmental, and social aspects of sustainability are used to define the purpose of an organization, and all of its activities emanate from this purpose (Stubbs & Cocklin, 2008). In order to understand how sustainability impacts an organization’s BM, it is first necessary to consider the differences between traditional and SBMs.

2.5.1 Traditional vs. Sustainable Business Models

Moving from a traditional to a SBM means the BM must change “from being the logic for making money to becoming a logic for creating economic, social, and

environmental value for all relevant stakeholders” (Rahbek et al., 2018, p. 270).

Traditional BMs prioritize short-term shareholder value, externalize pollution and resource waste as much as possible, and rely on linear production cycles (Stubbs & Cocklin, 2008). Achieving social and environmental sustainability, therefore, demands both structural and behavioral changes within the BM. For example, a firm might need to cooperate with competitors to develop system-wide solutions, or transform their production processes to achieve a closed-loop cycle (Stubbs & Cocklin, 2008).

Girotra and Netessine (2013) call for changing the four W’s of BM design: the what, when, who, and why of the business. The firm first needs to change the scope of *what* product or service it offers and determine which sustainability issues the BM must address. It is also important to decide *when* to make the change, ensuring that necessary information has been gathered beforehand. Creating a SBM also involves changes as far as *who* makes decisions and *why* the firm exists. The goal of these alterations is to develop a new BM that “empowers the right decision makers with the best available information and value-creating incentives to make the right decisions with measurable consequences” (Girotra & Netessine, 2013, p. 541).

One salient feature of SBMs is that the purpose of the business (the *why* of the BM design) has been redefined to encompass concerns beyond financial profitability and shareholder returns (Stubbs & Cocklin, 2008). This requires changes to the internal culture of a firm and realignment of expectations among the firm’s leadership, staff, and shareholders. The imperatives of social and environmental sustainability have to overlap with the imperatives of business development in ways that run counter to traditional business logic (Lüdeke-Freund, 2010). Traditional BMs and SBMs differ in three important ways. First, they have different definitions of value. Second, SBMs

consider additional groups of stakeholders to be relevant in their decision-making. Finally, traditional and SBMs use different metrics to evaluate their performance. Each of these differences will be discussed in turn.

Value

Under current economic situations, decision-making in firms is filtered through the value of profit maximization (Alexander, 2007). This is a decidedly narrow view of value, as priority is given to shareholder expectations (Stubbs & Cocklin, 2008). Yet, sustainable value requires the equal treatment of economic, social, and environmental concerns. Therefore, it is necessary to expand this definition of value and begin using a new ‘primary filtering value’ (Alexander, 2007, p. 156). A filtering value is the one through which we evaluate, prioritize, and implement activities that are required of other values (Alexander, 2007). By expanding traditional BM thinking to include the creation of sustainable value, it is possible to develop strategies that contribute to a more sustainable world and drive shareholder value at the same time (Bocken et al., 2015; Hart & Milstein, 2003).

In addition to the three value dimensions of traditional BMs – value creation, value proposition, and value capture – it is necessary to also consider value destroyed and value missed (Rahbek et al., 2018). These added dimensions capture the concept of impact: the negative outcomes of current business and the value squandered, inadequately captured, or lost (Rahbek et al., 2018; Yang et al., 2014). Combined, value destroyed and value missed constitute value uncaptured. Uncaptured value represents a potential opportunity for firms to create additional value through new activities and relationships by making use of what was previously defined as waste

(Yang et al., 2014). Additional value opportunities exist in the value capture component of the traditional BM. These include value absence (such as a temporary lack of necessary labor) and value surplus (having a labor supply in excess of the firm's needs) (Yang et al., 2017). Turning value uncaptured into value opportunities can trigger the creation of a new BM – specifically a SBM. The presence of negative value represents failed value exchanges in the BM (Yang et al., 2017). Yang and colleagues (2017) identified twenty-six sources of value uncaptured that firms could address to capture missed value opportunities in their current operations.

Using these new types of value, firms can create a sustainable value proposition – “the core of a sustainable business model” (Baldassarre et al., 2017, p. 177). Compared to the traditional version, a sustainable value proposition suggests a dialogue between business and society: it measures ecological and social value along with economic value (Boons & Lüdeke-Freund, 2013). Sustainable value proposition design results from combining three building blocks: generating shared value for a network of stakeholders, addressing a sustainability problem, and developing a solution that tackles the problem and accounts for stakeholder concerns (Baldassarre et al., 2017). By discussing the core elements of the value proposition with its stakeholders, the firm gains insight into new perspectives about the sustainability problem it intends to address. Incorporating stakeholder feedback helps the firm refine its approach to the problem and develop creative solutions. The firm can then test its new value proposition and its embedded assumptions. Further iterations of these three steps can take place until the firm finds a problem-solution fit: this will serve as the cornerstone of a new SBM (Baldassarre et al., 2017).

Stakeholders

As alluded to in the previous section, stakeholders are an important piece of SBMs. Stakeholder theory claims that “a firm’s fiduciary duty extends beyond shareholders” (Chung & Cho, 2018, p. 220). Instead of restricting the scope of the value system to customers, shareholders, and the focal firm, SBMs consider the needs of a wider group of stakeholders (Bocken et al., 2015; Yang et al., 2017). Firms will treat nature and society as stakeholders, working to promote environmental stewardship and social harmony (Stubbs & Cocklin, 2008). Furthermore, firms will create extended customer value by internalizing the harm done to society as a result of business operations (Bocken et al., 2015; Lüdeke-Freund, 2010). In addition to the traditional firm-level perspective, SBMs require the use of a system-level perspective in which the firm understands that its success “is inextricably linked to the success of its stakeholders” (Stubbs & Cocklin, 2008, p. 122).

There are three basic requirements for SBM components, broken into groups based on the supply chain, customers, and financial aspects (Boons & Lüdeke-Freund, 2013). Sustainability requires that a firm actively engages its suppliers and “does not shift its own socio-ecological burdens to its suppliers” (Boons & Lüdeke-Freund, 2013, p. 11). This means internalizing those socio-ecological impacts for which the firm is wholly accountable, and working with suppliers to address those for which the firm is mutually accountable – as described in the F2B2 model. Next, firms must also turn their attention to their downstream customer relationships to motivate customers to take responsibility for their consumption (Boons & Lüdeke-Freund, 2013). As with its suppliers, the firm does not shift its burdens to its customers, but rather engages them in a dialogue about sustainable consumption. Lastly, SBMs must appropriately

distribute the economic costs and benefits among the various BM participants and accurately account for ecological and social impacts (Boons & Lüdeke-Freund, 2013).

Performance Measures

Traditional business thinking adheres to Milton Friedman's shareholder theory, which states, "The responsibility of a corporation is to generate profits for its shareholders" (Chung & Cho, 2018, p. 220). Under this paradigm, firms believe anything other than core business activities will detract from their ability to reach this goal (Chung & Cho, 2018). In the 1960s and 1970s, however, a new social conscience emerged, leading to the first attempts to connect firm performance with social and environmental responsibility (Chung & Cho, 2018; Epstein et al., 1976). Social and environmental accounting (SEA) developed to satisfy the growing desire to identify, measure, and report on a company's social and environmental impacts (Epstein et al., 1976). Companies began publishing reports, though there was some debate surrounding how to go about reporting on impacts that did not lend themselves to the application of traditional monetary measurements. Proponents argued that monetized reports provided a standardized unit of value that could be compared across companies and over time, while opponents asserted that output measures for social and environmental impacts in monetary terms were "contrived and not meaningful" (Epstein et al., 1976).

This dilemma created a disconnect between the type of information disclosed and the type of information tracked by market analysts. Epstein and colleagues found that the most prevalent type of reporting was descriptive, since many companies "[did] not believe that useful measurements could be developed" (1976, p. 29). The

‘evidence’ companies chose to provide about their social and environmental efforts, therefore, varied considerably from company to company (Valero & Dickson, 2014). Companies understood the need for SEA, but did not understand how to incorporate social and environmental sustainability into their business taxonomy. Social and environmental measurements “are inevitably ambiguous in comparison [to measures of financial performance] as they convey non-monetary and often qualitative and subjective elements” (Chung & Cho, 2018, p. 225). This confusion has continued into the 21st century: even though a growing number of companies are incorporating corporate social responsibility (CSR) into their mission statements and public communications, implementation of sustainability strategies remains low (Chung & Cho, 2018).

Over time, research shifted from investigating the tradeoffs between financial and sustainability performance to developing frameworks that support a “synergistic, ‘win-win’ strategic outcome” (Chung & Cho, 2018, p. 215). An important development in SEA that helped firms simultaneously pursue economic, social, and environmental value was John Elkington’s Triple Bottom Line (TBL). The TBL grew in popularity following the publishing of Elkington’s 1998 book, *Cannibals with forks: The Triple Bottom Line of 21st century business*. In it, Elkington refers to businesses as cannibals whose natural instinct is to devour competitors, live by instinct, and disregard the consequences of their actions on the world around them. The idea of cannibals with forks, therefore, signals progress – no matter how minor this progress might seem. The TBL focuses corporations “not just on the economic value they add, but also on the environmental and social value they add – or destroy” (Elkington, 2004, p. 3).

Elkington (1998) identified seven drivers of the TBL agenda, a series of closely linked revolutions that would push companies toward higher levels of sustainability performance. These include markets, values, transparency, lifecycle technology, partnerships, time, and corporate governance (Elkington, 1998). Through these drivers, the concept of the TBL recognizes that “corporate sustainability issues revolve not just around process and product design, but also around the design of corporations and their value chains, of ‘business ecosystems’ and, ultimately, of markets” (Elkington, 2004, p. 6). By 2010, the TBL “had become part of the business lexicon” (Elkington, 2018, para. 7). It shaped important initiatives such as the Global Reporting Initiative, the Dow Jones Sustainability Indexes, and also served as the basis for the F2B2 break-even goals.

The TBL, however, is not by itself a sufficient indicator of sustainability performance (Stubbs & Cocklin, 2008). In 2018, Elkington himself published a piece in the Harvard Business Review proposing a recall of the term (Elkington, 2018). While the original goal for the TBL was to bring about system-wide change by questioning the sustainability of capitalism, it has largely been reduced to an accounting tool encouraging a trade-off mentality among its three components (Elkington, 2018). Even though thousands of TBL reports have been produced, the data is not being used in a consistent way to “track, understand, and manage the systemic effects of human activity” (Elkington, 2018, para. 11). The single bottom line paradigm still reigns, so the search continues for a way to fully integrate social and environmental sustainability into firms’ performance metrics.

2.5.2 The Business Case for Sustainability

Due to the discrepancies between sustainability and traditional business logic, the literature has increasingly turned its focus toward investigating the business case for sustainability. According to Schaltegger and colleagues, the purpose of developing a business case for sustainability is to understand how the links between sustainability and financial performance “can be managed, advanced, or innovated in order to improve economic success through voluntary social and environmental activities” (2012, p. 7). This view recognizes economic, social, and environmental sustainability equally, and has three requirements. First, the ‘voluntary social or environmental activity’ needs to be created with the intent to contribute to the solution of social or environmental problems – it cannot merely be a reaction to regulations (Schaltegger et al., 2012). Second, this activity must create a positive business effect that is measureable and based on sound business logic (Schaltegger et al., 2012). This strengthens the links between sustainability and financial performance and has often been researched using a case study format (e.g. Todeschini et al., 2017). Finally, it must be clear that a certain management activity has led to both. Fulfilling these three requirements legitimizes the pursuit of sustainability from a business perspective and validates the argument that sustainability does not inherently require a trade-off with economic performance.

Business cases for sustainability have to be actively created – they are not merely a byproduct of a casual approach toward sustainability initiatives (Schaltegger et al., 2012). Schaltegger and Burritt (2018) identified four main types of business cases for sustainability. Reactionary business cases only implement CSR if it is necessary from a traditional profit-driven rationale. These firms do not consider CSR to generate profits. Reputational business cases prioritize media sensibility and

concern themselves with public opinion of their activities. Responsible firms strive for performance excellence and actively seek opportunities to improve. The goal, however, for a business case for sustainability, is to achieve a collaborative business case: this is built upon dialogue-based management and engagement with a broad range of stakeholders. Such firms work with their stakeholders to pursue sustainability goals, regardless of whether or not monetary incentives are readily apparent (Schaltegger & Burritt, 2018). The business case logic guides management thinking and justifies the relevance of sustainability concerns for management decisions; sustainable transformation, therefore, depends upon companies moving from conventional reactionary cases toward collaborative models (Schaltegger & Burritt, 2018).

Creating a business case requires aligning a company's sustainability strategy with traditional methods for creating shareholder value. Hart and Milstein (2003) developed a four-quadrant framework that matches four dimensions of shareholder value against four global drivers of sustainability. The four quadrants are today (focusing on current business needs) vs. tomorrow (creating future business opportunities), and internal (sustainability drivers originating within the company) vs. external (drivers originating outside the company). Rather than starting with moral or legal arguments for firms to act, this framework explicitly links sustainability issues with economic opportunities – this simple display helps firms understand how they can act in a way that benefits business as well as society and the environment (Hart & Milstein, 2003). Schaltegger and colleagues (2012) identified six core drivers for business cases – these serve as intermediating variables between the corporate sustainability strategy and the BM. The drivers include cost and cost reduction, risk

and risk reduction, sales and profit margin, reputation and brand value, attractiveness as an employer, and innovative capabilities (Schaltegger et al., 2012). This list includes and expands upon the drivers listed in Hart and Milstein's (2003) model. For successful implementation of a firm's sustainability initiatives, there needs to be synergy between the sustainability strategy and the business case drivers, and between the business case drivers and the BM.

In the pursuit of sustainable development, a BM rationale "positions sustainability as an integral part of the company's value proposition and value creation logic" (Schaltegger et al., 2012, p. 12). Building the links between social and environmental activities – especially those that cannot be captured in monetary terms – necessitates an adjustment in strategies, objectives, and measurement tools, changes that touch every aspect of the BM. Since it serves as the filter through which information is processed and decisions are made (Chesbrough, 2010), the BM determines the extent of a firm's success with its sustainability strategy. In order to support continuous progress toward a sustainable future, the BM must be capable of continuous change: as the firm's contextual environment transforms, the BM needs to promote the management of voluntary social and environmental activities and to do so in a systematic manner (Schaltegger et al., 2012).

2.5.3 Sustainability Management

The management of a business case for sustainability must address one overarching question: "how profit increasing [socio-ecological] activities, rather than cost increasing measures, can be identified and integrated with the core business approach of a company" (Schaltegger et al., 2012, p. 10). Sustainability management, then, has both an internal and an external component: *internal* measures must be

created to assess sustainability initiatives, and these activities must result in *external* contributions to society, the environment, and the economy (Johnson & Schaltegger, 2016).

Two dominant rationales for sustainability management activities include profit-oriented sustainability and legitimacy-seeking sustainability (Schaltegger & Hörisch, 2017). Profit-seeking sustainability is rooted in Friedman's business logic that a company will only address sustainability issues if doing so has a positive effect on its financial performance (Schaltegger & Hörisch, 2017). This rationale assumes a company engages in sustainability for economic opportunities. In contrast, legitimacy-seeking sustainability is based on both institutional and legitimacy theories. Institutional theory states that a company would be influenced by what other companies are doing (imitation) and by what it has done in the past (routine; Chung & Cho, 2018). Legitimacy theory, meanwhile, asserts that congruence between organizational and societal goals is what secures an organization's survival (Schaltegger & Hörisch, 2017). Even when the firm's main goal is to reduce its socio-ecological impacts, these perspectives will influence the firm's motivations, governance, choice of sustainability management tools, and approaches (Schaltegger & Hörisch, 2017).

Birkin, Polesie, and Lewis (2009) identified four classes of information flows that are necessary to represent and assess the sustainable development of organizations. Their Cloverleaf Account of Sustainable Development encourages companies to consider both the additional types of value and stakeholder groups that constitute SMBs (Birkin et al., 2009). The four classes are: material and energy mass balances, lifecycle assessments of those mass balances, stakeholder analyses, and

measures of ecological resilience (Birkin et al., 2009). Combining knowledge from these four classes with business principles results in collective meaning making, a precondition for holistic systems thinking (Kurucz et al., 2017).

When pursuing sustainable value, the literature points to a series of thought processes that needs to take place regardless of company size or industry. The first step is diagnosis of the company's current reality (Birkin et al., 2009; Hart & Milstein, 2003). During this step, the company takes stock of the steps it has already taken toward sustainable development and identifies constraints on its progress (Birkin et al., 2009). The company evaluates internal resources and capabilities, but also extends its attention to the global landscape and develops consciousness of the system in which it operates. Thus the firm engages in a process of meaning making and reflection, during which it questions deeply held assumptions about the global context (Kurucz et al., 2017). Siqueira and Pitassi (2016) advise companies to adopt a beginner's mindset toward the sustainability issues at hand so as to prevent 'business as usual' thinking to impact the search for information. At this time, the company integrates diverse stakeholder worldviews and seeks out different kinds of knowledge from diverse disciplines (Kurucz et al., 2017). These activities help uncover any underlying assumptions about the BM and foster collaboration among stakeholder groups (Kurucz et al., 2017).

Using the information gleaned from this first step, firms can begin conducting an opportunity assessment (Hart & Milstein, 2003). With the assistance of sustainability management tools (such as Hart and Milstein's four quadrant framework), firms identify where there is an imbalance in their current portfolio: these places indicate missed opportunities and vulnerabilities (Hart & Milstein, 2003).

Syncing this evaluation of the firm's capabilities with its future vision helps to reveal the prerequisites for the firm's sustainability goals that are not currently being met (Birkin et al., 2009). By including diverse stakeholder groups in their decision-making, firms can "generate transformative ideas that integrate a wide range of perspectives and forms of knowledge from different disciplines" (Kurucz et al., 2017, p. 199) – ideas and knowledge that may have been filtered out by the focal firm if it had not solicited additional insight.

The final step in this thought process is the transition toward implementation (Birkin et al., 2009; Hart & Milstein, 2003). Firms can approach this step in a variety of ways, such as conducting several small experiments to test a range of possible activities (Hart & Milstein, 2003). An important part of this step involves building a foundation upon which the firm's future vision can take root – this requires horizontal alignment (selecting and prioritizing activities) and vertical alignment (ensuring a good fit between the firm's available tools and its chosen actions; Kurucz et al., 2017). Furthermore, it is key to focus on system building in this step and on understanding the firm's actions in the context of system relationships (Kurucz et al., 2017).

2.5.4 Challenges Related to Sustainability Management

The discrepancies between traditional business logic and sustainable business logic lead to a number of challenges related to managing and implementing SBMs. These issues span the full spectrum of the BM, from the system in which the business operates down to the reporting of sustainability initiatives. Four broad categories of challenges will be discussed in the following sections: systemic inconsistencies, structural tensions, obstacles related to the dominance of the Business Model Canvas (BMC), and value measurement shortcomings. Not only do these challenges create

tension within traditional business models, they are also amplified when attempting BMI. Therefore, it is necessary to discuss these challenges and include them in the list of topic areas for measuring sustainable BMI.

Systemic Inconsistencies

Since managers are tasked with protecting their organization's viability and competitive abilities in the current marketplace, "they will choose that option that is going to maximize their utilities within the existing framework that is reinforced and positively sanctioned in the marketplace" (Alexander, 2007, p. 158). Lehman and Kuruppu argue that our view of nature is framed by the language of economics and capital accumulation: under this framework, "nature has no meaning other than for economic and commodity purposes" (2017, p. 142). Using critical or radical theory, these authors questioned the ability of business to create long-term change and called for the examination of the systems in which businesses operate. Wells shared this viewpoint, saying, "A sustainable product cannot be produced by an unsustainable industry" (2013, p. 229). Contemporary motivations for pursuing sustainable development have been found to be highly connected to compliance with standards, suggesting that deep reform of political, regulatory, and market systems is necessary (Bossle et al., 2016; Rantala et al., 2018).

Systemic change requires "an intimate causal relationship between such issues as the characteristics of product technology, the industrial processes required to create that product, the structure of the industry that emerges to supply the product, and the business models employed by firms operating in that sector of the economy" (Wells, 2013, p. 229). Johnson and Suskewicz (2009) suggested a four-part framework for

thinking about new systems. These elements include an enabling technology that instigates systemic shifts, an innovative BM designed around the new technology, a careful market-adoption strategy that allows the new technology to incubate outside of traditional demanding markets, and a favorable government policy that promotes the development of the new model and technology (Johnson & Suskewicz, 2009).

Ultimately, a system needs to incorporate all four components for successful implementation of new technologies. This framework can be applied specifically to the creation of SBMs as well: a successful SBM needs a supportive system in which to operate – a system that is expressly aligned with the goals for sustainable development.

Structural Tensions

Due to the fact that the system in which businesses operate is not fully aligned with sustainable development, our “economic compass...points in exactly the wrong direction” (Lovins et al., 1999, p. 157). The majority of apparel production systems date back to the Industrial Revolution, when rapid mechanization (such as the development of the cotton gin and the sewing machine) led to labor shortages. While it is logical to economize on the scarcest resource, “Most businesses are behaving as if people were still scarce and nature still abundant” (Lovins et al., 1999, p. 157). Under linear production processes, the product is designed first, followed by the design of a production process and sales and marketing strategies to sell the product (Wells, 2013). Infusing this methodology with sustainable thinking runs the risk of evaluating sustainability strategies through “the norms of a business model that has emerged in a quite different context to solve quite different problems” (Wells, 2013, p. 229). In

addition to conducting a system-wide analysis of the factors that inhibit sustainable development, it is also necessary to consider the structure of BMs themselves – a reality that has often been neglected (Wells, 2013).

One vein of literature has focused on the concept of product-service systems (PSS). The aim of PSS is to evolve from traditional BMs based on the design and sale of physical products to “a new business orientation that considers functionalities and benefits delivered through products and services” (Barquet et al., 2013, p. 693). PSS changes the focus of the value proposition by treating the product as a means to provide the offer, rather than being the main substance of the offer. Sustainable PSS could potentially provide added value by contributing societal and environmental benefits (Yang et al., 2014). Doing so involves incorporating lifecycle thinking and additional forms of sustainable value (such as value missed and value destroyed) into the design of PSS. This shift in focus from products to services requires a new model, since ownership is not necessarily transferred to the customer and the provider is still responsible for the maintenance and disposal of the product (Barquet et al., 2013). One example of such a system within the fashion industry is the luxury rental company Rent the Runway, which allows customers to rent luxury garments for a specified time period. Once the customer returns the product, Rent the Runway assumes responsibility for the cleaning and maintenance of the garment prior to renting it out to another customer.

PSS create eco-friendly solutions with the potential for reaping additional economic value from a single product (Yang et al., 2014). The competitive advantages of PSS emerge through potential collaboration opportunities with service providers, customers, and value chain participants (Barquet et al., 2013). Customers receive more

customized solutions and higher total value through the added services, while providers gain access to information about product performance during the use stage, new market opportunities, higher profit margins, and more loyal customer relationships (Barquet et al., 2013). Multiple types of PSS exist, including product-oriented services, use-oriented services, and result-oriented services, giving companies the flexibility to adapt their BMs to suit their offering (Tukker, 2004). PSS contribute to sustainable development by shifting the business mindset from a product- to a systems-based approach, encouraging deeper stakeholder relationships and involvement, and increasing the providers' responsibility throughout the product lifecycle (Barquet et al., 2013). The overall effect of PSS is the transition of BM structures toward new arrangements that acknowledge the scarcity of natural resources and the impact of resource scarcity on society.

Within BMs, sustainability faces the challenge of overcoming organizational inertia – this is likely to be considerable since sustainability calls for a new paradigm by which the firm goes to market (Teece, 2010). Gilbert (2005) found a set of intervening variables that help to determine the level of inertia in the face of discontinuous change. Factors that decrease inertia include integrating outside influence on decision-making, separating the organizational structure in which to incubate sustainable initiatives, and framing the change as an opportunity as opposed to a threat (Gilbert, 2005). Each of these variables can help firms prevent the contraction of authority, reduced levels of experimentation, and hyper-focus on existing resources and capabilities that contribute to greater organizational inertia (Gilbert, 2005).

The second of the three variables – the organizational structure – has been a subject of much debate in academic literature. Sustainable development, with its new metrics and market paradigms, requires levels of collaboration and transparency that are largely foreign to traditional businesses. On the other hand, sustainable initiatives depend on the resources, marketing operations, and market access of existing business structures. For these reasons, O'Reilly and Tuchman (2004) proposed the idea of an ambidextrous organization. Such organizations have structurally independent business units that are each responsible for developing their own processes, structures, and cultures. However, these units are integrated into the existing business hierarchy and maintain strong linkages to upper management (O'Reilly & Tuchman, 2004). Ambidexterity allows for positive cross-fertilization among the business units, but prevents negative cross-contamination of 'business as usual' thinking (O'Reilly & Tuchman, 2004). Rather than allowing old ways to dominate the development of SBMs, ambidextrous organizations serve to support the progression of a BM toward sustainability.

Furthermore, structural tensions depend on whether the company is emerging into the market or operating as an incumbent. Emerging companies usually display high levels of social and environmental awareness and performance, and seek to attract like-minded consumers (Hockerts & Wüstenhagen, 2009). With a more entrepreneurial mindset, emerging firms are more likely to try out new approaches and question the assumptions held by incumbent firms. However, emerging companies often fail to reach a broader market and lack the necessary resources to achieve industry-wide transformation (Hockerts & Wüstenhagen, 2009). Incumbents, on the other hand, possess the resources and market presence to bring about widespread

change, but are reluctant to do so for fear of cannibalizing their existing business (Wüstenhagen & Boehnke, 2008). In this scenario, companies who choose to pursue sustainability lose out to companies that continue abiding by and competing according to existing market paradigms. Incumbents are also restricted by existing assets and deeply ingrained assumptions about how to operate within their specific industry (Hockerts & Wüstenhagen, 2009).

BMC Obstacles

Since its inception, Osterwalder and Pigneur's BMC (2010) has been the guiding framework for business model development. This is problematic due to the framework's complete omission of one important concept: sustainability. Using only the BMC "might result in business models that are identified as 'successful' regardless of their large-scale or long-term impacts on society at large" (França et al., 2017, p. 164). Upward and Jones share this concern, saying the BMC "may now, as the reference standard, actually impede a broader transition to flourishing...sustainable business models" (2016, p. 114). One of the early attempts to rectify this situation was Bocken, Rana, and Short's (2015) conceptual SBM framework, which is rooted in Osterwalder and Pigneur's (2010) BMC. This framework attempts to include additional stakeholders such as society and the environment, however it only mentions these stakeholders in two out of eleven BM subcategories. Other more recent attempts have been more comprehensive, including the FSSD-BMC (França et al., 2017), the Triple Layer BMC (Joyce & Paquin, 2016), and the Strongly Sustainable BMC (Upward & Jones, 2016).

França, Broman, Robèrt, Basile, and Trygg (2017) combined the FSSD and BMC to reveal their complementarities and provide guidance for capturing the business opportunities associated with sustainable development. By adding business specificity to the FSSD, the authors clarified both the framing principles for strategic sustainable development and revealed several obstacles that must be addressed in order to realize a company's sustainability vision. These include a shift in the company's mindset, management routines, and incentives, as well as stronger connections between units and organizations, competence development, and better communication (França et al., 2017). These obstacles indicate key areas for measuring the successful integration of sustainable development with a firm's BM.

Joyce and Paquin (2016) developed the Triple Layer BMC to complement and extend Osterwalder and Pigneur's (2010) original BMC. The 'triple layer' refers to two additional layers of the BMC: one to measure environmental value creation, the other to measure social value creation. The environmental layer is based on a lifecycle perspective and measures environmental impacts and benefits through each lifecycle stage. The social layer also measures impacts and benefits, but uses a stakeholder management approach to improve a company's social value creation potential (Joyce & Paquin, 2016). The authors created the model so there would be horizontal coherence within each layer, as well as vertical coherence among the three layers (Joyce & Paquin, 2016). This tool elevates sustainability to a strategic business level and is designed to "help users overcome barriers to sustainability-oriented change" (Joyce & Paquin, 2016, p. 1476).

The most comprehensive critique on the original BMC is the Strongly Sustainable BMC (SSBMC), which identified 12 major gaps between Osterwalder and

Pigneur's (2010) business model ontology and that required for SBMs (Upward & Jones, 2016). 'Strong sustainability' in this model refers to large-scale actions that are embedded in a finite ecosystem, using a definition of sustainability that is compatible with scientific knowledge (Upward & Jones, 2016). Weak sustainability, on the other hand, does not consider the containing system, is not linked to natural science, and "includes the creation of currently acceptable externalities already known to science to be problematic" (Upward & Jones, 2016, p. 115). The SSBMC redefines the terms 'value' and 'business model' to be compatible with strong sustainability. The authors even propose a new definition for profit – tri-profit – to refer to the net sum of the costs and benefits arising from the firm's activities in economic, social, and environmental contexts (Upward & Jones, 2016). Through five instrumental principles, the authors conceptualize and define the boundaries of a strongly sustainable BM and explore the use of a multidimensional set of units to measure sustainable value creation (Upward & Jones, 2016).

Achieving systemic change will require the evolution of tools such as the BMC beyond their traditional perspectives regarding the primary objective of a business. The aforementioned models evaluate and extend the BMC and reveal the gaps that distinguish a SBM from a traditional BM. For successful sustainable development to occur, it is necessary to elevate a new model – potentially one of the above models – to the rank of the original BMC. Without displacing the BMC, traditional business logic will continue to guide BM development.

Value Measurement Shortcomings

Under current accounting systems, “the cost of destroying ecosystem services becomes apparent only when the services start to break down” (Lovins et al., 1999, p. 146). In BM literature, value “is implicitly and uniquely measured by financial metrics with no reference to social or environmental impacts” (Upward & Jones, 2016, p. 100). Lovins et al. (1999) pointed out how current accounting practices actually reward companies for using resources and penalize them for attempting to improve the productivity of those resources: consumption of raw materials is recorded on a company’s income statement, while resource-saving investments can be found on the balance sheet. The markets, the authors continue, “Are full of distortions and perverse incentives” (Lovins et al., 1999, p. 156). Beyond this, the value of many ecosystem services is completely absent from firm reports. This makes it very difficult for a company to identify missed opportunities for value capture, as value uncaptured might be invisible at early production stages if the company has never attempted to measure or look for it (Yang et al., 2017).

Therefore, there is a desperate need for reformed measurement and accounting systems that provide decision makers and stakeholders with the information they need in order to act in favor of sustainability (Schaltegger et al., 2017). Information about social and environmental impacts can trigger corporate sustainability and, thus, is “key in a process of creating and diffusing sustainability innovations” (Schaltegger et al., 2017). Companies currently don’t have the means with which to compare and evaluate different investment or operational options through the filter of their sustainability impacts (Schaltegger et al., 2017). According to interpretivist theory, this faulty accounting system and lack of information “not only masks exploitative relations but

closes our thinking to values outside our current systems” (Lehman & Kuruppu, 2017, p. 141).

With such a long history of externalizing social and environmental impacts, developing systems to internalize them is a significant challenge. Capturing value from public goods such as clean air or potable water does not come easily to traditional BMs – at least not under a for-profit model (Teece, 2010). When social and environmental externalities become absorbed by a business, the result may be a lower cost to society, but this also represents either a higher cost for consumers or lower profit margins for the business (Wüstenhagen & Boehnke, 2008). Lüdeke-Fruend (2010) argued for an extended notion of customer value to include the customer, the firm, and the public. While this public value proposition can serve to legitimize companies in the eyes of consumers, there is also ambiguity about who will pay for it (Lüdeke-Fruend, 2010). Current systems mandate that companies appropriate value from public goods in order to justify the pursuit of sustainable initiatives.

Although many companies have begun producing reports to address these deficiencies in modern accounting systems, there are issues within the content of these reports. Chung and Cho (2018) found problems relating to imperfect measures and contradictory results in their review of literature. Due to the voluntary nature of reporting, there are no clear guidelines for companies to report their social and environmental impacts. This leads to uncertainty regarding the usefulness and validity of company reports (Chung & Cho, 2018). Additional confusion arises when attempting to discern the intended users of sustainability reports, as well as the motivation behind companies’ reporting: are they publishing to signal positive results or cover up negative ones (Chung & Cho, 2018)? One company within the fashion

industry that is pioneering a solution to these challenges is Kering, a global luxury group managing multiple brands in fashion, leather goods, jewelry, and watches (kering.com). In 2011, Kering piloted an Environmental Profit & Loss (EP&L) statement, and has since transitioned to an open source methodology to enable other companies to begin reporting as well. By building upon each other's work, the hope is to raise the standard across the industry and yield consistent and comparable reporting methods. Additional tools, such as the Global Reporting Initiative, have also been developed to address these challenges.

The breadth of these challenges illustrates the difficulty of transitioning from a traditional BM to a SBM. The issues that plague traditional BM development – organizational inertia, uncertainty and ambiguity, and tension between today's business and tomorrow's opportunities – are only magnified when combined with the task of pursuing sustainable development. Just as traditional BMs must transform to meet the needs of changing markets, the progression toward sustainability is a process of adapting and evolving. Successfully making this transition requires changes to the core of the business and to every component of the BM: in essence, it requires sustainable business model innovation.

2.6 Sustainable Business Model Innovation

Traditional BMI involves the reconceptualization of the BM, the reshaping of existing markets, and changing the rules of competition (Schlegelmilch et al., 2003). Sustainable BMI (SBMI), therefore, involves making these transitions such that they lead to improvements for the environment and society – either by creating positive impacts or by significantly reducing negative impacts (Bocken et al., 2014; Laukkanen & Patala, 2014; Morioka et al., 2016). SBMI concerns the direction of progress a

company is making, as well as the content of that progress: specifically, whether that progress contributes to sustainable development (Lüdeke-Freund, 2010). As detailed in the Brundtland Report, businesses have the power to be positive forces in the pursuit of sustainability. By aligning their offerings and arranging their BMs to meet the challenges related to sustainable development, firms can help achieve market diffusion of sustainability (Wüstenhagen & Boehnke, 2008). Offering new value propositions that support the sustainable development of society as a whole is a radical change to the ‘business as usual’ mindset; marketing such value propositions and convincing consumers to buy in, therefore, “requires adequately radical business model innovations” (Lüdeke-Freund, 2010, p. 7).

This radical change to the way business is organized and conducted is the essence of SBMI. There are two major components to the definition of SBMI. First, SBMI is innovation that creates a competitive advantage by offering superior customer value (Bocken et al., 2015; Lüdeke-Freund, 2010; Rahbek et al., 2018). This first point is important to keep in mind: the addition of ‘sustainability’ does not overshadow or somehow decrease the relevance of the consumer. Rather, sustainability is meant to infuse and revitalize the methods by which a company meets consumer needs. The second component is an extension of the first: customer value should be created while simultaneously making positive contributions to the company, society, and the environment (Bocken et al., 2015; Lüdeke-Freund, 2010; Rahbek et al., 2018). The value creation methods should also minimize harm. Despite the importance of this topic, SBMI lacks an integrated body of research (Lüdeke-Freund, 2010). Therefore, the journey of SBMI research will be described in the following section.

2.6.1 Development of SBMI Research

Research in the field of SBMI is not yet mature, exhibiting “characteristics indicative of a field at an early stage of theoretical development” (Adams et al., 2016, p. 195; Lüdeke-Freund, 2010; Yang et al., 2017). Articles are widely distributed across more than fifty journals, and there is generally a lack of consensus regarding the concepts of SBMs (Adams et al., 2016; Yang et al., 2017). Many terms have been used interchangeably, such as eco-innovation, environmental innovation, sustainable innovation, and sustainability-oriented innovation: SBMI emerged from this body of literature (Siqueira & Pitassi, 2016). On one point scholars have come to a consensus: sustainability-oriented innovations are different from economic-oriented innovations (Siqueira & Pitassi, 2016). Within typical business contexts, innovation results in market growth and increased sales fueled by increased consumption (Siqueira & Pitassi, 2016). SBMI, however, with its extended focus on society and the environment, cannot be adequately captured using these traditional metrics. The present study seeks to explore this dilemma by developing a new set of metrics built specifically for SBMI.

Boons and Lüdeke-Freund (2013) found three levels of sustainable innovation research: organizational, inter-organizational, and societal. The first category, organizational sustainable innovation, focuses on individual firms and their innovative capabilities. Siqueira and Pitassi (2016) include the development of new BMs in this category. Inter-organizational sustainable innovation extends this focus to the firm’s network and the relationships between the actors that contribute to the innovation process. For example, this level encompasses government policies and actions to help companies overcome the risk of pursuing sustainable innovations (Siqueira & Pitassi, 2016). Societal sustainable innovation has the broadest scope, focusing on societal

shifts and the definition of value itself (Boons & Lüdeke-Freund, 2013). Such research could extend to the individual level, covering changes in people's attitudes and behaviors (Siqueira & Pitassi, 2016).

Adams et al. (2016) review of literature explored some key trends in sustainability-oriented innovation (SOI) research – these lead into the research devoted specifically to SBMI. The authors found three contexts of SOI research: reactive, embedded, and systems change. Reactive SOI prioritizes operational optimization and incremental improvements to 'business as usual,' with no changes made to existing BMs. Embedded SOI describes a transformation in the firm's purpose and a focus on developing external linkages to aid in the innovation process. Finally, systems change drives institutional change and abandons the prevailing economic paradigm. Though this last context was shown to be important, Adams et al. (2016) found little empirical work in this area.

What began as a stream of literature with a relatively narrow focus on product innovation has since increasingly turned its attention to the implementation of innovative sustainable solutions (Adams et al., 2016). Slowly, sustainability has been treated as less of a technical challenge and is more often framed as a BM challenge (Adams et al., 2016). Schaltegger et al. went so far as to assert, "Sustainability-oriented innovations are obviously predisposed to not fit with the dominant logic of an established business model" (2012, p. 14). Scholars now recognize that for sustainability efforts to be successful, there is a critical need for "complementary competences and a facilitating infrastructure" – in other words, a supportive BM (Rahbek et al., 2018, p. 277). Harnessing the power of business can potentially shift entire systems toward sustainable development: "business models can lead to altered

consumption patterns, efficiency gains, and consistent system designs” (Lüdeke-Freund, 2010, p. 7). Instead of relying on isolated sustainability activities, SBMI can be employed to fix the fundamental flaws in the underlying systems (Bocken et al., 2015; Rahbek et al., 2018).

2.6.2 Exploring Successful SBMI

In contrast to traditional business logic that pits competitors against each other and attempts to keep BM components secret, sustainability innovation requires increased levels of openness to external parties. Currently, expertise of how to organize and facilitate the implementation of sustainability in global supply chains is poorly developed (Van Bommel, 2011). Therefore, it is likely that firms will need to seek knowledge from outside its own resources. Two elements stand out in the literature about successful SBMI: alliances between incumbents and entrepreneurial start-ups, and open innovation.

Alliances

Hockerts and Wüstenhagen (2009) define incumbents and start-ups as Greening Goliaths and Emerging Davids, respectively. Each category of companies has a distinct set of strengths and weaknesses related to implementing sustainability. Davids tend to stimulate disruptive sustainability transformation upon entering a market. They are more nimble than Goliaths, as they have flexible processes and are not restricted by investments in existing assets (Hockerts & Wüstenhagen, 2009). However, Davids often fail to transform the broader industry due to a lack of market reach and resources. Goliaths, on the other hand, have extensive resources at their disposal. They tend to wait until the innovations launched by start-ups become

disruptive, then launch products to mimic Davids (Hockerts & Wüstenhagen, 2009). Goliaths are plagued by a fear of cannibalizing their market share and devaluing previous investments, so they are generally more hesitant to pursue innovation (Hockerts & Wüstenhagen, 2009).

Several scholars advocate for collaboration and interconnectivity between these types of companies (e.g. Ertekin & Atik, 2014). Molderez and Van Elst (2015) argue that Davids or Goliaths will not bring about the sustainable transformation of industries on their own, but rather by interacting with one another. While small companies usually have the innovative capabilities, large companies are more versed in commercialization – they have the resources and capabilities in marketing, distribution, production, and financing (Wadin et al., 2017). A major challenge, therefore, is “closing the gap between incumbent fashion companies willing to innovate their business model toward sustainability and born-sustainable startups striving to make their business model replicable and scalable” (Todeschini et al., 2017, p. 770). To expedite the diffusion of sustainable technologies and best practices, the literature asserts the need for small companies and large multinational enterprises to form alliances with one another (Wadin et al., 2017).

Alliances could become a vehicle for large and small companies to engage in a joint process of SBMI. If both parties are aligned on their strategic intents, they can pursue collective learning and help bring about industry-wide sustainability transformations that neither party would have been able to accomplish on its own (Wadin et al., 2017). The partnership can evolve into a ‘race-to learn’ process and spur companies toward increased experimentation and opportunity-seeking activities (Wadin et al., 2017).

Recent fashion industry efforts demonstrate a growing awareness among apparel companies of the need to form alliances to improve sustainability outcomes. In November 2017, four outdoor companies including Patagonia and Icebreaker met to launch a project that brings brands and retailers together to talk about pre-competitive challenges to sustainability (Arthur, 2019). Tim Wahnelt, CEO of Outdoor Profits, said about the meeting, “Instead of everyone fighting their own battles, we saw this collaboration as an opportunity to join forces and find solutions for all” (Arthur, 2019, para. 6). This Retail Meets Brand (#RMB) group is now twenty companies strong with four focus teams to tackle sustainability challenges from economical, ecological, legal, and communication perspectives (Arthur, 2019). The spirit of the initial #RMB meeting was shared by companies at the April 2019 Cotton Incorporated Cotton Sustainability Summit, where Alice Hartlet, Senior Manager for Sustainable Innovation at Gap Inc., said, “Brands can do their part, but the industry needs to work together to achieve results” (Friedman, 2019, para. 2).

Open Innovation

Building off of the idea of external partnerships, a second component of successful SBMI is open innovation. According to systems theory, each individual part of a system depends not only on the conditions within itself, but also on the conditions of the whole system (O’Connor, 2008). Open systems (as outlined by biology) have semi-permeable boundaries: these necessitate interactions with the larger system in which one part is embedded (O’Connor, 2008). Systems theory provides grounding for the concept of open innovation, which assumes that firms should make use of internal and external ideas and paths to market (Bogers et al.,

2018). The most common type is inbound open innovation, in which a company opens up its innovation process to external inputs and contributions, allowing knowledge to flow across organizational boundaries (Bogers et al., 2018). Open innovation encourages diffusion and fosters co-creation, two factors that hold significant promise for companies as they explore SBMI.

Alliances and open innovation are manifestations of the recognition that companies exist inside larger societal and environmental systems. While these concepts are out of sync with traditional business logic, they are supportive of the requirements for SBMI. The presence of alliances and open innovation indicates a company's commitment to sustainability innovation and improves the likelihood that those efforts will be successful.

2.6.3 Justification for SBMI

Meeting the sustainability challenges of modern-day society has particular relevance for businesses. Scholars anticipate that shortages of resources and ecosystem services “are likely to become the limiting factor to prosperity” (Lovins et al., 1999, p. 155). França et al. (2017) predict that businesses will increasingly run into limitations born out of past and present unsustainable development. Firms that fail to react will lose out to competitors that proactively seek to align their BMs with sustainability principles (França et al., 2017; Lovins et al., 1999). To achieve a sustainable future, Teece argues that “the supply side driven logic of the industrial era” is no longer a viable option (2010, p. 172). Firms that remain rooted in linear production systems, in which production and marketing processes are developed after a product is designed, will find it difficult to make meaningful contributions to sustainable development (Rahbek et al., 2018). Even though firms may have made sustainable product

improvements in the past, sustainable development is an ongoing process: it is both a necessary and profitable endeavor to examine the underlying BM and innovate on an ongoing basis (Lovins et al., 1999).

Technological improvements alone will not be sufficient for sustainable development, as “a sustainable product cannot be produced by an unsustainable industry” (Wells, 2013, p. 229). This reality is true for traditional businesses as well as for sustainable ones: the value of a new technology cannot be captured until it is brought to market via a BM (Chesbrough, 2010). Within the realm of sustainability innovation, the most promising innovations will fail – regardless of the sustainability value they could potentially contribute– if they lack compelling value propositions and viable paths to market (Teece, 2010). Wells captures this reality with the description of an ‘intimate causal relationship’ that exists between the “characteristics of product technology, the industrial processes required to create that product, the structure of the industry that emerges to supply the product, and the business models employed by firms operating in that sector (2013, p. 229). Without BMI, the benefits of new sustainable technologies, products, or processes will not be captured (Teece, 2010).

Van Bommel (2011) found that external pressures and incentives are key influencers in a firm’s decision to pursue and implement innovation. These external forces can range from consumer demands or pressure groups, to government policies, potential reputation loss, or threats to the firm’s competitive advantage (Van Bommel, 2011). Since these forces originate from outside the firm, the responses they demand might not fit within the firm’s version of ‘business as usual’ (Van Bommel, 2011). Organizing to meet the demands of external forces, then, requires the firm to adjust its organization, internal and external network relationships, and incentives (Porter &

Kramer, 2006). Furthermore, the firm's response to sustainability issues, as illustrated by its sustainability strategy, needs to be backed by a supportive BM – otherwise, the discrepancy between the BM and the sustainability strategy will create friction and impede the success of the firm's sustainability efforts (Schaltegger et al., 2012).

In sum, sustainable development demands BMI. Combatting the challenges related to SBMs – systemic inconsistencies, structural tensions, Business Model Canvas obstacles, and value measurement shortcomings – requires the creation of novel BMs based on a new underlying logic. If sustainability is relegated to a management problem, the risk is that solutions will be developed and evaluated “through the norms of a business model that has emerged in a quite different context to solve quite different problems” (Wells, 2013, p. 229). Traditional business logic and performance metrics are not compatible with the goals of sustainable development; therefore, a SBM needs to operate under a new logic and develop its own set of metrics.

2.7 Measuring Sustainable Business Model Innovation

The following section discusses traditional business measures and performance measurement tools. Although it is important to understand the key traits of performance measures and the process for developing measurement tools, this section highlights the reasons why traditional measures are not capable of measuring innovation and, more specifically, SBMI.

2.7.1 Business Measures

A performance measure is a metric used by businesses to quantify the efficiency and effectiveness of an action (Heikkilä et al., 2016). Such metrics can

serve multiple purposes within an organization, such as assessing performance, providing feedback about strategy execution, and communicating management priorities throughout an entire organization (Heikkilä et al., 2016). Companies treat performance metrics as targets: good targets serve as “hypotheses about how business systems are supposed to work” (Kaiser & Young, 2018, p. 44). Businesses, especially those pursuing some form of innovation, are constantly experimenting and testing these hypotheses in their efforts to create value. Often businesses are not able to directly measure the activities and behaviors that contribute to value creation; in this case, they rely on key performance indicators (KPIs), instead (Kaiser & Young, 2018). A KPI measures the observable results of those value-creating activities and behaviors (Kaiser & Young, 2018). KPIs can be used to convey the degree to which a company’s understanding of the business system was correct, serving as an early indication of knowledge gaps or faulty assumptions (Kaiser & Young, 2018).

KPIs help businesses gauge their progress toward strategic objectives. Good KPIs provide objective evidence of progress, measure what is intended to be measured, and serve as comparisons against which to track performance change over time (www.kpi.org). They can be used to track efficiency, effectiveness, quality, timeliness, governance, compliance, project performance, resource utilization, and other key business components. Typically, KPIs are categorized into one of five types of measurement: inputs (resources consumed), processes (business activities), outputs (what is produced), outcomes (accomplishments and impacts), and project (status and progress; www.kpi.org). In addition, KPIs can focus on strategy, operations, projects, risk management, or employee performance (www.kpi.org).

KPI development involves six steps (www.kpi.org). The first step is to describe the intended results by defining key terms and clarifying the performance goals. Next, it is important to determine whether these results can be captured with multiple metrics. When measuring intangible activities and behaviors, it can be beneficial to use more than one metric as this helps to thoroughly capture the desired result (Churchill Jr., 1979). After this ideation process, a firm selects the best measures for each objective. These measures should provide all necessary information without leading to burdensome data collection processes, and should encourage desirable employee behaviors. If multiple metrics were chosen, these need to be grouped together into an index. Using the chosen metrics, the firm then sets targets and thresholds to define good and bad performance and determine how the data will be used. Finally, the measures are defined and documented in a scorecard format. This last step helps transition from a mere measurement system to a tool for implementation and use (www.kpi.org).

KPI development is reminiscent of the scale development process outlined by Churchill Jr. (1979). The first step is to specify the domain of the measure: define what is included and what is excluded. Second, the researcher generates a sample of items. As with the recommendation for KPIs, scholars support the use of multi-item measures. After initial item development, the next step is to purify the measure. It is unlikely that any single item will fully represent the measure; rather, each item should capture a similar amount of the core of the measure. Responses to items, then, should be highly inter-correlated. Churchill Jr. discusses iteration as a possible method for measure purification, a process of looping back through the first two steps to arrive at a stronger measure. The final steps in this process include assessing both reliability

and validity. Then, the scale can be tested to ‘develop norms’: a basis against which to rate one company’s performance compared to others in its industry (Churchill Jr. 1979).

The processes for KPI and scale development contain many similarities and can serve as complementary guides for the present study. These frameworks will provide guidance for creating a measurement scale that not only advances academic research, but also can be utilized by practitioners in real-world situations. To further explore how measurement scales have been adapted to suit the needs of the business world, the following section describes an example of a business-oriented performance scorecard.

The Balanced Scorecard

One of the most popular performance measurement and management tools is the Balanced Scorecard (BSC), developed by Kaplan and Norton (Hansen & Schaltegger, 2016). The BSC gives managers a comprehensive view of the business by incorporating both financial and operational measures across four dimensions: customer perspective (how customers see the firm), internal perspective (what the firm must excel at), innovation and learning perspective (how the firm can continue to improve and create value), and financial perspectives (how the firm looks to shareholders) (Kaplan & Norton, 1992). The financial measures convey the results of past actions, while the operational measures capture the drivers of future financial performance (Kaplan & Norton, 1992). This distinction between leading and lagging indicators (operational and financial measures, respectively) is a hallmark of the BSC framework: it is capable of communicating whether strategic objectives were achieved

in the past, as well as how results should be achieved on new objectives in the future (Figge et al., 2002).

The BSC limits the number of metrics used, which allows managers to focus on those most critical to achieving the organization's strategic goals (Kaplan & Norton, 1992). Due to the BSC's focus on the overarching vision and priorities of the firm, it requires the involvement of senior managers – an advantage compared to other performance measurement systems that are primarily overseen by finance teams (Kaplan & Norton, 1992). Instead of aiming to influence and control employee behavior, the BSC is forward-looking and sets goals to pull people toward the firm's vision (Kaplan & Norton, 1992). Each of the four perspectives includes goals, which are fairly generic, and measures, which are the operational versions of the goals (Kaplan & Norton, 1992). By providing a comprehensive view of the business, managers can identify whether gains in one area lead to detrimental consequences in another – thereby improving their ability to generate increased total value for the firm (Kaplan & Norton, 1992).

This framework compiles information from multiple aspects of the company's BM and leads managers to view the company through the eyes of diverse stakeholder groups (Kaplan & Norton, 1992). This element of the BSC aligns with the principles of sustainability, which call on firms to create value for society and the environment in addition to value for customers and shareholders. It is important to note, however, "the logic of the BSC remains almost exclusively in the economic sphere" (Figge et al., 2002, p. 274). Social and environmental concerns are not explicitly included in the framework. The four perspectives do not mention the firm's suppliers, the communities in which it operates, the environment, or society at large. That being

said, the BSC is important to mention because of its prominence in business literature and its potential to serve as the foundation for a more sustainable measurement system.

KPIs, as well as other performance measurement tools and frameworks, can be applied to any company, regardless of their strategic focus. Common business metrics include market penetration and market share (Yoon et al., 2017). It is rare, however, for social and environmental performance management to be integrated into the general performance management of a firm (Figge et al., 2002). This results in lack of clarity regarding the connection between social and environmental initiatives and economic success – a major obstacle preventing companies from internalizing the principles of sustainability (Figge et al., 2002). In order to create a SBM, economic, social, and environmental performance must be fully integrated: this is a key requirement for developing a tool to measure SBMI. Furthermore, the literature suggests that traditional business metrics are not adequate for measuring innovation. Therefore, the following sections discuss the reasons for measuring innovation specifically, the tools that have been developed for measuring innovation, and why innovation requires new metrics.

2.7.2 Measuring Innovation

One of the chief problems for innovation teams is determining whether or not their chosen strategy is bearing fruit (Kirsner, 2015). In a survey of 270 corporate leaders in strategy, innovation, and research and development roles, Kirsner (2018) found the biggest obstacles to innovation included internal politics and lack of alignment, company culture issues, the inability to act quickly on signals of change, lack of budget, and lack of clarity about the company's strategy or vision. Metrics can

be used to identify these obstacles before they completely stifle the company's innovation progress; in fact, metrics are key to enabling viable, long-term, pervasive, and successful innovation efforts (Barriers, 2007). Not only do metrics help managers make informed decisions in the midst of uncertainty, but metrics also help align the goals and actions of the entire organization with the innovation strategy (Muller et al., 2005). This is key in the pursuit of SBMI, which requires making changes that penetrate to the core of the business. In fact, transparency – a defining trait of sustainable businesses – relies heavily on performance measurement and disclosure of data (Sroufe, 2017).

Metrics are necessary assets for achieving successful innovation. They track progress, alert management to knowledge gaps and false assumptions, and serve as important tools for communicating the firm's efforts to internal and external stakeholders. The literature shows evidence that financial performance is based on both leading and lagging indicators, which means companies not only need to pay attention to financial measures of past performance, but also to the non-financial drivers that lead to future performance (Hansen & Schaltegger, 2016). Without managing these drivers, the company will not be able to control how they ultimately come to bear on financial performance (Hansen & Schaltegger, 2016). Furthermore, innovative businesses have a drastically different mindset than traditional businesses, as explained in previous sections of this paper. Metrics can be used to help drive this mindset change because they are connected to the overarching vision of the firm and can effectively and efficiently communicate this vision throughout the entire organization (Barriers, 2007).

Innovation Performance Measurement

To track innovation efforts, companies often use Innovation Performance Measurement (IPM) systems. These systems include a performance measurement scheme that defines metrics across relevant dimensions of the firm's strategy, KPIs and benchmarks for each dimension, a reporting format that is in line with the firm's needs, and a method and supporting framework for gathering, analyzing, and disseminating the innovation reports (Dewangan & Godse, 2014). In terms of the development of IPM systems, scholars are increasingly advocating for the use of the BSC, noting that it provides a good foundation by including both the financial perspective of past performance, as well as the operations perspective of future performance (Dewangan & Godse, 2014). Based on their review of IPM literature, Dewangan and Godse (2014) developed a set of five guiding principles for researchers intending to create exhaustive IPM schemes. The principles are (a) includes a multi-dimensional view of performance, (b) measures performance of various lifecycle stages of the innovation process, (c) effectively addresses internal and external stakeholder goals, (d) supports a cause-and-effect relationship between performance measures, and (e) is easy to implement and use.

Zizlavsky's (2016) research builds upon these principles by crafting an innovation scorecard that outlines the stages of the innovation process, as well as management decision gates that separate each stage. The five stages are ideation, development, production, commercialization, and post-implementation review. The decision gates at each stage reveal the questions management should be asking in order to move from ideation to project launch in a systematic way. One important takeaway from Zizlavsky's framework is that the questions change from one stage to

the next; therefore, the metrics should also change (2016). These questions cover the full span of the goals for IPM systems, as outlined by Dewangan and Godse (2014): communication and clarification of goals; diagnosis, control, and correction of problems as they arise; resource allocation; employee performance evaluation and incentives; and continuous process improvement.

Reviewing the IPM literature reveals a complete lack of sustainability in each of the proposed measurement systems. While many scholars discuss the importance of multiple stakeholder perspectives, both internal and external, none explicitly reference society and the environment as a whole. The trend toward viewing the innovation process through lifecycle stages is encouraging, as this manner of thinking is compatible with sustainability principles and the use of lifecycle assessments. However, sustainability innovation remains a major gap in the literature. In addition, the majority of the IPM literature focuses on product, process, or technological innovation. Although each of these types of innovation has a few elements in common with BMI, the obstacles they must manage are different in both strength and nature from those standing in the way of BMI.

Measuring BMI

There is a notable absence in the literature when it comes to measuring BMI: only one article (Clauss, 2017) has proposed a set of measures. Clauss conducted a content analysis of the literature from 2002-2014 and aggregated the BMI sub-constructs he uncovered. From 120 potential business model components, he arrived at 73 semantically different options and assigned these to one of three categories: value creation, value proposition, and value capture. A second round of review led to a

consolidation of the 73 components into 10 sub-constructs of the three business model dimensions. Then, items were developed to measure changes in each of the sub-constructs. Clauss then conducted two rounds of samples to test the initial item pool, refine the measures, and finalize the scale.

To develop the measures, Clauss relied heavily on on Osterwalder and Pigneur's (2010) BMC, the nine building blocks that make up a BM. In addition, he used blend of previously defined items from his literature review and self-developed items based on both theoretical and practical knowledge. Clauss acknowledges that "although not necessarily reliable" the measures "were developed in numerous consultancy projects and were therefore highly valid" (2017, p. 393). He later had six experts from academia test the measures to assess representativeness. Inner-rater reliability for all six raters was 0.50 using Cohen's *kappa*, but for two raters at a time ranged from 0.70 to 0.92. Although the rating for all six raters was very low, Clauss considered these results valid. Finally, Clauss solicited feedback through two rounds of testing by practitioners at manufacturing firms in different industries.

In brief, the measures mirror Clauss' definition of BMI in that capturing BMI requires measuring changes in value creation, value proposition, and value capture. Within value creation, Clauss measures new capabilities, new technologies and equipment, new processes and structures, and new partnerships. These four sub-constructs investigate changes in the resources and capabilities at a firm's disposal, as well as in the external relationships it forges, which allow it to create new forms of value. An additional four sub-constructs speak to how the firm intends to offer this value to customers (value proposition): new offerings, new customer segments or markets, new channels, and new customer relationships. Finally, Clauss includes two

sub-constructs that make up the value capture dimension: new revenue models and new price or cost structures. Taken together, changes in each of the three overarching value dimensions results in BMI. Clauss notes, “it is not necessary that all potential sub-constructs or each dimension of the business model change at the same time or in the same way” (p. 397). BMI then, could result from changes in one value dimension and subsequent adaptations of other dimensions (Clauss, 2017). These findings support Laudien and Daxböck’s (2006) assertion that BMI is an incremental and emergent process.

These measures are an important contribution for both academics and industry practitioners, however they are not perfect. In his discussion on limitations, Clauss specifically mentions a bias in his testing toward engineering and electronics firms: he drew his samples from industry-specific trade fairs. The exclusive use of manufacturing firms is also an issue: the measures need to be tested against service-oriented industries as well. Furthermore, the majority of his samples included individuals from middle and lower management positions, when in reality the strategic direction and decision-making behind BMI comes from upper management.

The aggregation of business model components also means “the scale is only adequate for measuring more general business model innovations” (p. 400) and needs to be combined with case study investigation. Yang et al. (2017) affirm this observation for BMI literature in general, saying, “...business model innovation is an emerging field with few existing theories, and it has not yet reached a mature stage and thus, the most suitable approach for investigation is case studies” (p. 1797). This is a particularly pertinent observation when it comes to the present study: these measures need to be tested against fashion companies in order to gauge their relevance

for the industry. Finally, the scale does not mention components that lead to *successful* BMI. Factors such as a firm's resiliency are necessary in order to implement any of the proposed changes, yet there is no way to capture these capabilities using Clauss' scale.

Clauss' measurement scale lays the groundwork for the methodology of the study at hand, yet on one topic it is entirely silent: sustainability. This fact highlights the vast oversight of traditional BMI literature and a major gap in our understanding of sustainability innovation. Clearly, there is a need to investigate the specific metrics that are most pertinent to SBMI. First, however, it is important to outline the differences between traditional business metrics and those best suited for measuring innovation.

2.7.3 Drawbacks of Traditional Metrics

Although KPIs are widely used in management literature, they are most often researched in relation to non-radical innovation projects (Kristiansen & Ritala, 2018). Kirsner's (2015) survey of senior innovation executives found they were using two types of metrics: activity-related metrics to show the company's dedication to innovation, and impact metrics to demonstrate the impact of the firm's activities. The most widely used metrics included revenue generated by new products, number of products in the innovation pipeline, stage-gate specific metrics, profit and loss statement or other financial impact, and number of ideas generated (Kirsner, 2015). Kristiansen and Ritala (2018) supplement this list by including net present value, return on investment, time to market, and success or failure rates. Metrics generally focus on outputs and expected market performance of innovation projects, rather than on the innovation process itself (Kristiansen & Ritala, 2018).

This is problematic, because the management practices necessary to support radical innovation (such as BMI) are substantially different from those necessary for either incremental innovation or traditional business operation (Kristiansen & Ritala, 2018). Traditional metrics, such as market penetration and market share, are inconsistent with the priorities of innovation (Yoon, 2017). For example, market penetration cannot capture the potential for market growth, and market share focuses the firm's attention on past performance (Kuczmarski, 2001; Yoon, 2017). These metrics cause companies to miss opportunities and threats, especially when the goal is to create new markets or categories that did not previously exist (Yoon, 2017).

Using financial metrics alone can also be harmful for the innovation process. Hempel describes this as “counting what can be counted, not what counts” (2006, p. 34). While financial metrics are familiar and understandable for firms, they can negatively impact innovation efforts. When pursuing radical innovation, the initial focus areas for the firm are conceptualization, experimentation, and the gradual reduction of uncertainty – these areas require forward-looking metrics (Kristiansen & Ritala, 2018). Too much of a focus on outcomes and immediate financial impacts leads companies to pursue projects that might be more likely to succeed, but are less innovative overall (Kuczmarski, 2001). Research on past innovation projects actually revealed a relatively low significance of financial measures (Henttonen et al., 2016). In practice, however, many companies initiate innovation projects by first carrying out a revenue growth gap calculation, quantifying the innovation problem, and developing a project to fit the stated gap (Barriers, 2007).

When financial metrics drive the innovation process, firms can become overconfident about their ability to carry out the project, underestimate the obstacles

related to innovation, or completely miss opportunities and threats that are not captured in their financial reports (Yoon, 2017). Measurement systems have a strong influence over the behavior of both managers and employees (Kaplan & Norton, 1992). If KPI targets are solely based on financial outcomes, employees will prioritize hitting these targets over the long-term financial health of the company – Kaiser and Young (2018) found that this behavior could be traced back to a company's compensation structure. Placing emphasis on cost-cutting and efficiency measures (typical of mature BMs that have developed a sense of what 'business as usual' looks like) turns the focus to optimizing current processes rather than generating new ideas (Kuczmarski, 2001). Simultaneously, this focus discourages the learning process of trial and error that is essential for successful innovation.

Traditional business metrics are not sufficient when it comes to measuring innovation – in many cases, they can even be harmful to the innovation process. Common metrics, such as market share and market penetration, focus a company's attention backwards, prioritize outcomes over processes, incentivize employees to pursue relatively safe projects over potentially ground-breaking but high-risk options, and blind the company to new opportunities and oncoming threats. Furthermore, typical metrics – even those commonly used to specifically measure innovation – do not capture a company's overall innovation capability (Muller et al., 2005). Even though KPIs can be used to incentivize employees to meet financial targets, this is not ideal for measuring innovation. Instead, the main function of innovation-oriented KPIs should be to promote organizational learning as the company pursues its overarching vision (Kaiser & Young, 2018).

Best Practices for Innovation Measurement

Drawing on the available literature, multiple best practices emerge for measuring innovation. Research collectively cautions against using too many metrics, because measurement systems then become too cumbersome and difficult to use (Hempel, 2006; Kirsner, 2015; Kuczmarski, 2001). It is generally accepted that a manageable measurement tool consists of eight to ten metrics (Muller et al., 2005). However, Jenson, Leith, Doyle, West, and Miles (2016) found that innovation systems might require a large number of indicators to fully capture the conditions that lead to system performance. It appears that there needs to be a balance: the measurement scheme needs to be easy to use and implement, but it also needs to be comprehensive to help companies avoid blind spots (Muller et al., 2005). The metrics should be simple, meaningful, and intuitive so they “become common currency throughout the company” (Muller et al., 2005, p. 42). Good metrics should also be based on long-term strategies instead of short-term financial gains, and reflect progress against those strategies (Askar et al., 2009).

One area that seems to be missing from the literature is the need to measure a company’s innovation capabilities. Previous sections of this literature review outlined challenges companies face when pursuing BMI: organizational inertia, uncertainty and ambiguity, and tension between managing today’s business and creating tomorrow’s opportunities. In keeping with the lack of literature related to measuring BMI, there is very little information about measuring a company’s ability to overcome these challenges. In order to measure successful BMI, however, it is important to cover companies’ intangible assets such as resiliency (Teixeira & Werther, 2013), coping strategies for uncertainty (Schneckenberg et al., 2016), and integration of

sustainability into the core of their business (Sroufe, 2017). The purpose of building a measurement tool for SBMI is to fill this gap by exploring the capabilities that enhance a firm's likelihood of achieving successful SBMI.

An innovation measurement system also needs to clearly convey the goal of innovation and why it is necessary (Kirsner, 2018). These elements become evident in a firm's compensation, recognition, and incentive strategies. The metrics chosen will determine how success is measured, how resources are allocated, and how people are rewarded for driving growth (Yoon et al., 2017). Therefore, the measurement tool needs to properly attribute value to factors that enable innovation, even if these factors are not typically measured in the business world. Doing so requires acknowledgement of untraditional forms of value – especially value that is not easily captured by financial metrics. This idea aligns well with sustainable businesses, which incorporate additional dimensions of value compared to traditional businesses. While sustainability has largely been excluded from innovation measurement systems literature, a few researchers have attempted to incorporate sustainability – the following section discusses these efforts.

2.7.4 Incorporating Sustainability into Innovation Measurement

Even though there is increased interest among companies to engage in sustainability, Sroufe's (2017) survey of CEOs found low incorporation of sustainability into areas such as budgeting, supply chain management, and employee engagement. This gap between intent and implementation reveals confusion over how companies "engage in, evaluate progress toward, and signal their commitment to sustainability goals" (Sroufe, 2017, p. 316). Overall, this is a problem of integration: a lack of penetration into the core of the business. Sroufe (2017) proposes that

integrated companies are those with a positive capacity toward evaluating their sustainability progress. Metrics play an important role in this process: auditing performance can spur companies toward innovation. Sustainable goals, therefore, when measured against benchmarks, can be catalysts for change – improving both the company's innovation capabilities and sustainability performance (Sroufe, 2017).

Schaltegger, Etxeberria, and Ortas (2017) identified six attributes necessary for characterizing sustainable innovation: aim, type, nature, means, social context, and stage. The aim is the overall result the organization wants to achieve through innovation. This holistic vision needs to incorporate systems-thinking and be fully embedded in the principles of sustainable development. In addition, company accounting methods and incentives need to align all internal efforts towards this sustainable vision. The type, or output, of innovation, involves backcasting to envision a sustainable future, organizing the firm's activities in the appropriate direction to achieve the intended result. Nature refers to the form of innovation: radical or incremental. Means are the necessary technical, creative, and financial resources to accomplish the innovation. Both the nature of the innovation and the means required for success might necessitate collaboration with external parties and more open approaches to innovation.

Next, the social context encompasses the stakeholders involved or the environmental factors affecting the innovation process. Sustainability innovation is unique as far as the need for trans-disciplinary involvement from academics and practitioners. Finally, stage refers to the steps taken during the innovation process. Metrics for sustainability innovation need to account for the nuances of each innovation project, as outlined by these six characteristics. Therefore, measurement

schemes need to be comprehensive to provide structure to sustainability innovation efforts, but flexible enough to avoid stifling the innovation process itself.

Measuring Sustainable Businesses

To develop a measurement scheme for sustainability innovation, it was pertinent to research how sustainable businesses are measured. Two organizations will be discussed: the Dow Jones Sustainability Index (DJSI) and the Sustainability Accounting Standards Board (SASB). These groups rate companies on various dimensions of their sustainability efforts, providing initial ideas about how to measure sustainability in the business world.

The DJSI utilizes a Corporate Sustainability Assessment developed by Robecosam. The first step in the assessment is to conduct a financial materiality analysis “to identify those sustainability factors that drive business value and have the greatest impact on the long-term valuation assumptions used in financial analysis” (Measuring Intangibles, 2017, p. 3). The DJSI focuses heavily on financial metrics. The materiality analysis weighs sustainability criteria by industry, ranking the relevance of long-term economic, social, and environmental factors to companies’ business value drivers (Measuring Intangibles, 2017). Companies are ranked based on elements such as their awareness of the importance of sustainability factors to their financial success and whether they have determined the potential financial impact of being exposed to these factors, implemented strategies to manage sustainability risks, and developed ways to measure the effectiveness of their sustainability strategy. The assessment also evaluates companies based on external audits of their stated results and transparent communication of their sustainability strategies.

The DJSI methodology limits qualitative answers by using pre-defined multiple-choice questions. By combining the above criteria, DJSI argues that their assessment serves to evaluate the quality of a company's sustainability management. In respect to the present study, however, this assessment falls short of measuring SBMI – a company's sustainability management might not encompass innovation at all. An additional component of the DJSI rating is a media and stakeholder analysis. Through ongoing monitoring of publicly available information, the DJSI identifies companies' involvement in and response to economic, social, and environmental crises that could potentially impact their reputation or their financial performance (Measuring Intangibles, 2017). The inclusion of this analysis is admirable, but it runs the risk of capturing the quality of a company's public relations department instead of the degree to which a company has integrated sustainability into the core of its business. Furthermore, the singular focus on financial materiality is concerning: similar to the effect of using traditional financial metrics, this focus leads companies to miss opportunities and threats that originate from outside traditional market boundaries.

The SASB is similar to the DJSI process in that it conducts a materiality assessment to determine whether sustainability topics impact a company's financial condition or operating performance (www.sasb.org). Each topic is mapped to specific impacts on a company's revenue, operating costs, asset value, liabilities, and financing costs. The overarching goal of the SASB is to standardize reporting on environmental, social, and governance issues – therefore, it is no surprise that financial aspects are emphasized. Under the SASB's conceptual framework, their goal is for the metrics they use to be useful, applicable, comparable, complete, verifiable, aligned, neutral,

and distributive (www.sasb.org). Although the literature discourages such a heavy reliance on financial metrics when measuring innovation, this list of characteristics could be useful for developing a SBMI measurement scheme. In addition, the concept of materiality in both the DJSI and SASB methodologies could be incorporated into SBMI measurement, though it would need to be adapted to better balance social, environmental, and economic concerns. If materiality encompassed a broader set of concerns beyond financial factors, it could be a valuable asset for helping direct a firm's attention to those sustainability issues that are most strategically relevant (Porter & Kramer, 2006).

These measurement tools provide insight into the task of measuring sustainable businesses, but neither the DJSI nor the SASB explicitly mentions innovation. Overall, each focuses more on risk management than on innovating to pursue greater levels of sustainability. One potential remedy for this problem is Figge, Hahn, Schaltegger, and Wagner's (2002) concept of a Sustainability Balanced Scorecard (SBSC).

The Sustainability Balanced Scorecard

The SBSC integrates sustainability into Kaplan and Norton's (1992) original BSC framework. The idea behind the SBSC is to capture performance improvements in economic, social, and environmental dimensions simultaneously (Figge et al., 2012). The BSC is also a viable starting point for measuring innovation performance, as one of the four perspectives is focused entirely on innovation and learning. There are two primary strategies for incorporating environmental and social aspects into the BSC: weaving these aspects into the existing four perspectives (customer, internal, innovation and learning, and financial) or creating a new sustainability perspective. It

is also possible to create an entirely new scorecard, but researchers agreed this would not be a viable option unless it was an extension of one of the first two strategies (Figge et al., 2002).

While the SBSC could be an attractive option for integrating environmental and social aspects into mainstream business activities, there is an ongoing debate in the literature regarding its usefulness. Two of the original authors later commented that the SBSC “is diametrically opposed to the complex and multi-faceted nature of corporate sustainability and ill-suited to achieve transformational change of for-profit organizations toward sustainability” (Hahn & Figge, 2018, p. 919). Recall the previous comment about the BSC: its logic is solely rooted in economics (Figge et al., 2002). Using a SBSC, therefore, would mean sustainability could be viewed by companies as merely supplemental to core business activities, rather than as the driving force behind those activities. Hansen and Schaltegger (2018) assert that the SBSC is still a valuable tool for implementation and measurement, saying the sustainability results depend more heavily on a company’s sustainability strategy than on the tool used to manage it. For analyzing and initiating radical change, Hansen and Schaltegger (2018) suggest alternate approaches (e.g. Boons & Lüdeke-Freund, 2013; Hockerts & Wüstenhagen, 2009; Stubbs & Cocklin, 2008).

The literature reveals a dearth of information regarding how to appropriately measure a company’s attempts to improve its sustainability performance. Available measurement tools largely focus on risk management and brand image maintenance rather than on the degree to which a company is engaging in groundbreaking sustainability work. The topic of measuring SBMI has not been covered by the

available literature, and therefore represents an area ripe for research and investigation.

2.8 Summary

The review of literature conveys an urgent need for research to more adequately capture the phenomenon of SBMI and develop a measurement tool to identify it in real-world contexts. Prevailing measures used in business, and even those created to study innovation, fail to fully articulate the capabilities required for a company to successfully pursue SBMI. Therefore, it is necessary to develop a new measurement scale that combines resources from business model, business model innovation, sustainable development, and sustainability management literature.

The literature revealed several concepts that, either positively or negatively, contribute to the overarching topic of SBMI. Following the example of Clauss (2017) – the study that most closely matches the nature of the present study – these were compiled into a table to keep track of concepts that could be useful to measure in relation to SBMI (Table 2.1). The table was structured in a way that maximized its utility throughout the study by including the following columns:

Concept: the table included the name of the concept to help the researcher keep track of how often it was called for in the literature.

Definition: how the concept had previously been defined in the literature.

Selected Citations: the table listed articles where the concept was defined and conceptualized and/or tested.

Table 2.1. Concepts from the literature that are potentially relevant for measuring SBMI.

Concept	Definition	Selected Citations
Organizational Inertia	The inability to enact internal change in the face of external change due to resource and routine rigidity	Chesbrough, 2010; Mitchell & Coles, 2003
Coping Mechanisms	Mechanisms that help decision-makers remain active in contexts with a degree of unpredictability	Schneckenberg et al., 2016
Resiliency	The competency needed to continually develop or renew a firm's configuration of resources	Clauss, 2017; Teece, 2010; Teixeira & Werther, 2013
Multi-dimensional Innovation	The ability to maintain a variety of innovations at once to generate future expectations for growth	Hart & Milstein, 2003; Markides, 2006; O'Reilly & Tuchman, 2004
Ambidexterity	Separating exploratory units from traditional units but maintaining links at the executive level	Christensen et al., 2016; Gilbert, 2005; O'Reilly & Tuchman, 2004
System-level Perspective	A perspective in which the firm understands that the success of the firm is closely linked to the success of its stakeholders	Bocken et al., 2015; Stubbs & Cocklin, 2008
Synergy	Alignment between the firm's sustainability strategy and the business case drivers	Hart & Milstein, 2003; Schaltegger et al., 2012
Integration	Alignment between the sustainability-related activities and the company's performance metrics	Sroufe, 2017
Gravity	The mindset that drags down ideas and ignores new ideas	Strategic Direction, 2007
Primary Filtering Value	The value through which we evaluate, prioritize, and implement activities that are required of other values	Alexander, 2007; Bocken et al., 2015; Rahbek et al., 2018
Alliances	Collaboration between entrepreneurial startups and incumbents	Hockerts & Wüstenhagen, 2009; Todeschini et al., 2017
Open Innovation	Opening up a firm's innovation process to external parties for their input and collaboration	Bogers et al., 2018; O'Connor, 2008
Mindfulness	Allows individuals "to view, decode, and interact with the world around them" (Siqueira & Pitassi, 2016, p. 1186)	Siqueira & Pitassi, 2016; Laudien & Daxböck, 2006

Chapter 3

METHODS

3.1 Research Objectives

The purpose of this study was to develop a set of measures that can be used to assess SBMI in fashion apparel companies. Through an exploration of the capabilities that promote and the challenges that inhibit SBMI in the review of literature, key areas that contribute to SBMI were identified. The objectives for the study were the following:

1. Obtain expert input about the concepts that contribute to sustainable business model innovation and about how to assess this type of innovation in the fashion industry.
2. Consolidate relevant concepts and develop measures for each of them.
3. Obtain expert feedback on the quality and utility of the measures.

3.2 Research Strategy

This study consisted of two phases. Phase I involved twelve expert interviews to obtain their broad insights about SBMI and the relevant concepts for measuring it. Using the list of concepts generated from the review of literature, the researcher coded the interview transcripts with these concepts in mind and identified those most necessary for measuring SBMI in the fashion industry. In Phase II the researcher developed measures for the chosen concepts and again solicited feedback from the experts.

3.2.1 Phase I

The literature review provided insight into key concepts that either contribute to or hinder the process of SBMI. By paying particular attention to the unique challenges related to SBMI and the capabilities necessary to overcome them, the researcher developed an exhaustive list of concepts that could potentially be included in a measurement tool – following the example set by Clauss (2017). In Phase I, experts provided insight about SBMI in the fashion industry by providing examples from their professional experience. The experts were asked to discuss SBMI and the concepts they believed are necessary to consider when assessing this type of innovation. The interviews were primarily broad explorations of SBMI. Following the interviews, the researcher used the list of concepts from the review of literature in a deductive analysis of the interview transcripts. The interview data was used to determine for which concepts measures would be developed.

Interviewing experts prior to developing the measures was slightly different from how Clauss (2017) conducted his research. Clauss constructed a measurement tool for BMI using the subconstructs of BMs as the foundation for his measures, and then interviewed experts afterward to validate the measures. Although the literature does not elevate one single definition of what constitutes a BM, Clauss had the advantage of measuring what had been thoroughly researched in academia. In contrast, SBMI is not yet one coherent topic in the literature, requiring information from multiple disciplines to understand what it is and what factors contribute to it. This study, therefore, sought expert input at the start of the study in order to select the concepts that should be included and measured – a step that was referenced by Churchill Jr. (1979) in his model for scale development, even though it ultimately fell outside the scope of his study. This method was beneficial because the researcher

obtained a better understanding of what SBMI looks like in practice in the fashion industry – information that, today, cannot be obtained from the literature.

Sampling Method

Sampling in interview-based qualitative research involves four steps: defining the sample universe, selecting a sample size, devising a sample strategy, and sample sourcing (Robinson, 2014). To define the sample universe, it is necessary to specify inclusion and exclusion criteria (Robinson, 2014). For the purposes of this study, inclusion criteria were the following: practitioners with at least ten years of professional experience related to fashion, sustainability, or finance who were in positions affording them a holistic perspective within their chosen field. These individuals were desired because of their level of expertise, the breadth of their experience, their systems-level perspective, and the depth of their knowledge about ‘business as usual’ in their chosen industries. It was critical to have a mix of professionals from inside and outside of the fashion industry, as well as from different roles within the fashion industry, in order to leverage the knowledge in both spheres. This heterogeneous sample helped the researcher create a measurement tool that has both internal and external validity (Robinson, 2014). Individuals who did not meet the above criteria were excluded from the study.

In his review of literature, Robinson (2014) found the ideal sample size for this type of study, which seeks input from a specific set of experts with particular professional experience, was 3-16 participants. This size allowed for “individual cases to have a locatable voice within the study, and for an intensive analysis of each case to be conducted” (Robinson, 2014, p. 29). Since the aim of this study was not to develop

a case study on each participant, but rather to solicit feedback and obtain multiple perspectives, the researcher conducted twelve interviews. This sample size was beneficial because it was large enough to obtain feedback from multiple industry perspectives, but small enough to allow for in-depth across-subject analysis of the interviews. According to Grounded Theory, analysis should proceed at the same time as data collection, rather than being left until later (Strauss & Corbin, 1998). The researcher applied this theory by beginning data analysis while interviews were still being conducted to judge in real-time whether or not further data collection would be beneficial (Robinson, 2014).

This study utilized a purposive sampling method. Purposive sampling is a nonrandom sampling technique that is used to ensure specific cases within a sampling universe are represented (Robinson, 2014). Because this study drew on multiple industries and streams of academic literature, purposive sampling was the most efficient method for including subjects that adequately represent each area under study. The researcher and her advisor drew from their professional networks to identify a preliminary list of interview candidates. From this list, twelve individuals agreed to participate in the study. Table 3.1 summarizes the perspectives each participant brought to the study and their level of experience in their chosen field.

Interview Schedules

This study utilized semi-structured interviews to obtain qualitative feedback about the concepts related to SBMI. Semi-structured interviews allow for open-ended responses to gather additional insight, and they also maintain flexibility within the pre-determined order of the interview (Gill et al., 2008). The ability to pursue responses in

more detail aligned well with the purpose of this study: to explore the relatively young area of SBMI and develop a tool to measure it.

Table 3.1. Study participants’ perspectives and experience levels.

Expert	Perspective	Experience
1	Manufacturing, Supply chain	Chief Financial Officer
2	Retail (startup)	Director of Sustainability
3	Research	Chief Executive Officer
4	Finance, Investment	Chief Financial Officer
5	Business incubation	Managing Director
6	Communications	Chief Strategy Officer
7	Retail (incumbent)	Chief Sustainability Officer
8	Manufacturing, Supply chain	Director of Sustainability
9	Manufacturing, Supply chain	Chief Executive Officer
10	Communications	Policy Director
11	Finance, Investment	President
12	Systems change	Principal Strategist

In order to ensure ethical treatment of human subjects, the researcher participated in the University of Delaware Institutional Review Board’s (IRB) training and submitted the interview schedule for IRB review. Due to the fact that the interviews were conducted via GoToMeeting rather than in person, the researcher was granted permission to use modified consent forms that only required verbal consent from study participants. Copies of all IRB documents are included in the Appendix (Appendices A, B, C). The researcher asked each participant for permission to digitally record the interview. During the recruitment process, the researcher explained the purpose of the study, the reason why the participant was chosen to participate, and the approximate amount of time the interview would last. In addition, the researcher let participants know that they would not be compensated for their participation and assured that their identity would remain anonymous.

Conducting the interviews over GoToMeeting calls allowed the researcher to communicate with subjects across the world, preventing geographical access from becoming an inhibiting factor. Each interview began by asking the subject to define SBMI in his or her own words. The researcher then asked subjects to talk about examples of SBMI they had seen in the fashion industry, as well as capabilities companies must have to successfully pursue SBMI and obstacles they might face along the way. Each interview lasted between 25 and 45 minutes. A copy of the interview schedule is included in the appendix (Appendix D).

Data Analysis

Following each interview, the researcher listened to the recording and transcribed the interview verbatim. Nvivo software was then used to analyze the concepts within each interview. Using the constant comparative method of joint coding and analysis, the researcher analyzed the data during the data collection process. This method is “concerned with generating and plausibly suggesting...many properties and hypotheses about a general phenomenon” rather than being concerned with proof (Glaser, 1965, p. 438). Therefore, this method was useful for the study because the concept of measuring SBMI is new and lacks definition – it needs to be researched in a way that does not limit its exploration.

The constant comparative method involved coding individual interviews in as many categories of analysis as possible, and then comparing these incidents with previous incidents in the same category (Glaser, 1965). This continuous process of comparison was ideal for the present study because it very quickly allowed the researcher to compile information from multiple interviews across several important

concepts – in this case, the key concepts related to SBMI. Constant reflection led to the generation of conclusions regarding the utility and validity of each concept and potential relevant measures. In addition, the researcher was able to identify whether new concepts needed to be included in the measures by noting the frequency with which they were discussed across the full set of interviews. Finally, the researcher culled the list of concepts from the literature based on the concepts that were actually discussed by the experts.

There is not one set way to go about the process of constant comparison (Boeije, 2002). Based on the design of this study, the process proceeded as follows: immediately after each interview, the researcher transcribed the interview. Already in this step, the researcher had the opportunity to mentally process the information from the interviews a second time and begin to identify key concepts. The transcripts were then uploaded into Nvivo software to be coded. Information from the interviews was grouped into concepts and sub-concepts, using the list of concepts from the literature as an initial guide. Once all of the interviews had been coded, the researcher reviewed the data in each node and reassigned content to alternate nodes as needed. The researcher then looked through each transcript two more times, specifically to determine if any blocks of un-coded information needed to be incorporated. Finally, the researcher and her advisor reviewed and finalized each concept.

3.2.2 Phase II

Following Phase I, measures were developed for each sub-concept. These measures drew on information from the expert interviews in order to fully capture the information coded under each sub-concept and determine the best way for indicating different degrees of its presence or absence. The researcher sought to develop

measures that satisfied the criteria for good key performance indicators. The researcher continuously refined the measures to achieve a closer fit with these criteria, which are listed in Table 3.2.

Table 3.2. Grading rubric with criteria for measure development.

Criteria	Grade	Explanation
Simple to use	3	Fully satisfies the criterion
	2	Somewhat satisfies the criterion
	1	Does not satisfy the criterion
Easy to understand	3	Fully satisfies the criterion
	2	Somewhat satisfies the criterion
	1	Does not satisfy the criterion
Objective	3	Fully satisfies the criterion
	2	Somewhat satisfies the criterion
	1	Does not satisfy the criterion

These criteria served as the rubric against which the researcher graded each measure. Adapting the method used by Clauss (2017), the researcher graded each measure against the criteria using a 3-point scale: (3) Fully satisfies the criterion, (2) Somewhat satisfies the criterion – needs improvement, (1) Does not satisfy the criterion. In addition to the researcher evaluating the measures and items herself, the researcher’s advisor also independently graded them. Then, they compared results and discussed discrepancies. This refinement process was carried out three times to refine the measures prior to soliciting expert feedback. By the last round of refinement, the research team reached 92% agreement in their grades of the measures. The purpose of this iterative process was to enhance the internal consistency and reliability of the measures (Churchill Jr. 1979; Hallgren, 2012). The expert feedback served to enhance the content validity of the measures.

Data collection during this phase of the study focused on the third research objective: to obtain expert feedback on the quality and utility of the measures. Using Qualtrics, a questionnaire was developed to invite the 12 experts to give specific feedback about the measures, including how useful the measures would be for assessing SBMI. The researcher provided survey participants with a document listing each of the identified concepts and the proposed measures for each sub-concept. Experts were asked four questions about the measures in each concept and five questions in a summary section that included all concepts (Appendix E); in addition, the experts were given fields throughout the questionnaire to provide comments. The experts were asked about the importance of each measure, whether any measures were duplicative or could be eliminated, and whether the measures would be applicable for both large and small companies. In the summary section, the experts were asked if any ideas were missing, if the measures altogether fully captured SBMI, which concepts were most critical, and whether companies and investors would find the measures useful.

Chapter 4

RESULTS

4.1 Phase I Results

The following sections outline the results of Phase I of the study: the expert interviews. At the beginning of each interview, the experts were asked to define SBMI and share any examples they had seen within the fashion industry. Overall, the experts' answers revealed that SBMI is a very new concept and only incomplete examples are available. Expert 3 could think of “businesses that have tried bits and pieces of this,” and Expert 6 could only identify examples in the fashion industry that were “not necessarily sustainable, but they’re more sustainable.” Expert 4 found it easier to start by defining types of sustainability innovation that have not succeeded:

I don’t believe that I’m aware of any that have created a sustainable business under the premise of the environmental or social impact...[there have been] a number of attempts to posit the product as having a positive, or we’ll call it a minimized environmental impact: that premise alone has not succeeded.

A few experts discussed examples from outside the fashion industry, such as the circular business model for the Phillips light bulb (Expert 8) and AirBnB’s software platform that allows individuals to rent out their assets (Expert 12).

Experts 11 and 12 offered examples within the fashion industry. Expert 11 highlighted Liberty and Justice Clothing, a factory in Liberia where workers have

equity in the company and for every article of clothing produced, the factory makes a school uniform to be donated locally. Expert 12 discussed a Hong Kong-based retailer called Grana that takes a lower cut of the retail price for itself in order to distribute value more fairly to its customers and suppliers.

Although complete examples of SBMI were difficult to find, the experts identified various characteristics of SBMI, capabilities that companies would need to successfully engage in SBMI, and obstacles that might prevent SBMI from occurring. Approaching SBMI from these various angles helped create a comprehensive picture of the concept and informed the measure development process in Phase II.

The expert interviews revealed nine concepts that are necessary for measuring SBMI: Sustainability Vision, Integration, Transparency, Ambidexterity, Resiliency, Mindfulness, Systems-Thinking, Open Innovation and Alliances, and SBMI Requirement. Each of the nine concepts and their sub-concepts will be discussed in depth in the following sections.

4.1.1 Sustainability Vision

Expert interviews revealed that a sustainability vision is a critical component of SBMI. This vision guides all business decisions, outlines the company's long-term mission, and serves as the tiebreaker when the company has to make trade-offs between competing values. Most importantly, the vision equally promotes all three pillars of sustainability (people, planet, profit). This vision enables a company to engage with other concepts of SBMI, including Integration, Transparency, and Ambidexterity. The Sustainability Vision concept was broken down into three sub-concepts: Leadership Buy-In, Easy to Explain, and Three Pillars.

Leadership Buy-in

Nine experts highlighted the importance of leadership buy-in. Leaders include the CEO and management team, as well as the board of directors if applicable. The sustainability vision “needs to be absolutely driven from the top” (Expert 10) because the leaders in a company have the power to drive innovation forward. Expert 7 said, “When you see that commitment [to sustainability], that’s when you really start to see innovation.” Patagonia, Adidas, and Unilever were cited as examples of companies whose leadership commitment to sustainability has been integral to their success. Sustainability needs to be “a top leadership commitment,” “something that the CEO really has on his or her radar,” and “part of the business strategy” in order to take root within a company (Expert 5). Expert 11 discussed the role of leadership in creating an enabling environment for sustainability innovation: leaders, through their convictions about the importance of sustainability (Expert 5), can develop a culture that supports employees in their pursuit of the company’s sustainability vision (Expert 2).

According to multiple experts, guiding a company to pursue its sustainability vision is a challenging role. Expert 4 described a sustainability innovation leader as a pioneer, “often...the person face down in the mud with an arrow on their back.” Leadership buy-in, then, not only speaks to a leader’s support for sustainability innovation, but also to the leader’s ability to champion this type of innovation even when it is not the industry norm. Traditional leaders often succumb to “the herd mentality...you look to the left and you look to the right and since everybody is doing things this way...why am I trying to do something differently” (Expert 3). To pursue SBMI, companies have to have leaders “who embrace change...and are good at managing it” (Expert 10). These leaders are visionaries (Expert 3), they support

innovation and experimentation (Expert 11), and they are fully committed to the sustainability vision (Experts 2, 5, 7, 10, and 12).

When a company lacks this kind of leadership, or when leaders are hesitant to pursue sustainability innovation, “[the company] may not be able to achieve success” (Expert 1). If leaders do not value sustainability, this stifles employees’ ability to drive change internally (Expert 10). A long-term sustainability vision requires long-term leadership commitment as well: “the average life of a CEO today [is] about five years...that short-term approach may not...create a healthy and enabling environment for innovation” (Expert 11). Expert 3 described how the type of leadership required for sustainability innovation is rare, saying, “We often times have great operators who are running the ship, not visionaries.” It is often those individuals who are perceived as being more acceptable and less risky who make it into the highest-ranking positions in a company. Historically, according to Expert 3, these have been “50-year old white guys”:

These guys are the people who have the most to lose in any innovation, because it’s their bonus check, it’s their retirement check...they are so close to their finishing line, personal finishing line, you know they’re in shouting distance of retirement, and now you want [them] to abandon everything [they’ve] built [their] career on for something novel, that may or may not work? These will be very responsible people who would say for personal, as well as for very good reasons, ‘let’s not try that.’

Leaders of sustainability innovation must balance responsibility to their stakeholders with a willingness to take risks and try new things; leaders who prioritize predictable short-term performance will tend to make conservative decisions that prevent a company from driving change and achieving SBMI (Expert 3).

Easy to Explain

The company's sustainability vision must be clearly defined and specific to its business model. Sustainability is a vague term: "it's often misused, and...on a very basic level you could take sustainability as simply sustaining the economic value of a company" (Expert 11). In addition, three of the experts asked for clarification about SBMI. Expert 1 reviewed the literature on SBMI prior to the interview, saying it was a pretty vague concept. Expert 4 asked which of the two connotations of sustainable business were being discussed, environmental or financial (notably leaving out the social dimension of sustainability). Expert 5 asked for clarification, citing the reality that there is "so much different nomenclature out there on this topic." This confusion and lack of clear consensus was captured well by Expert 9: "I must point this out, a lot of people don't even understand what is sustainability...it's very vast, a very big topic." Therefore, a prerequisite for pursuing SBMI is to clearly define what the company means by 'sustainability.'

The sustainability vision must also be specific to the company's business model. Several general definitions of sustainability exist, such as achieving a balance between "meeting today's needs [and] meeting tomorrow's needs" (Expert 10) and "ways of doing business that meet...social needs within environmental limits and therefore...is viable in the long run" (Expert 12). Such broad definitions allow for

many different paths toward a sustainable future, but companies have to be able to describe the end state they're working towards (Expert 5) and translate their vision into business strategies. This could involve using terminology that business leaders and stakeholders understand and catering to their type of thinking (Expert 11).

Ultimately, the sustainability vision of a company needs to be operationalized: "written into its business plan [as] principles or goals or aims around sustainability innovation...that really does help define where they put budget and what they prioritize as a business, you know quarter after quarter and year after year" (Expert 10). The vision must be clear enough to help companies make difficult decisions, such as "does it matter that we now beat profits month over month and grow by another 20%, or does it matter that there is this balanced consideration of profit, people, and planet?" (Expert 5) The United Nations Sustainable Development Goals were cited as methods to practically apply the concept of sustainable development at a company level (Expert 12), though a company does not necessarily have to use these specific goals in its vision (Expert 11).

Finally, the vision must be easy to explain and understandable to internal and external stakeholders (Expert 3). All employees at every level of the company need to know about and understand the sustainability vision (Expert 1). Beyond internal stakeholders, the company must be able to explain its vision to external stakeholders such as investors and shareholders. The vision should communicate a focus on "future-proofing the business, reducing risks in the long run, and making sure that [the company is] well-positioned to respond to and take advantage of new opportunities as the world changes" (Expert 12). SBMI is not currently the norm in the fashion industry, so companies have to be able to address the concerns of those external

stakeholders who have an interest in the company's future and to whom the company owes explanations about its business decisions (Expert 12). The ability to communicate pertinent information to the company's stakeholders requires that the sustainability vision is clear and specific, that it communicates the company's motivation for being in business (Expert 3), and that it has understandable links to daily operations and the long-term health of the company.

Three Pillars

The final component of a company's sustainability vision is that it must uphold all three pillars of sustainability: people, planet, and profit. Any sustainable business model "implies a complete solution mechanism, which is able to demonstrate these three pillars" (Expert 1). Experts 1, 10, and 11 defined sustainable value as the creation of social, environmental, and financial value and the reduction of negative impacts in all three areas: "maximizing benefits to people and communities, working across the value chain, while minimizing...impacts and conserving and restoring the environment" (Expert 10). Two additional experts talked about generating enough economic activity to meet people's needs (Expert 12), but doing so within the constraints of local and global environmental limits, such that a company could continue operating indefinitely "whilst simultaneously allowing the planet and society to function and thrive" (Expert 6).

A critical requirement of a company's sustainability vision is that equal weight is attributed to social and environmental value as to financial value. Four experts (1, 3, 10, and 11) discussed how current accounting systems and measures of development prioritize financial value at the expense of social and environmental value. Experts 1

and 11 specifically mentioned how Gross Domestic Product (GDP), the principal measure used to capture a nation's wealth and development, is a constraint to sustainability: "in the current economic model, you grow by cutting down a tree" (Expert 11). A collective measure that equally captures all three pillars of sustainability does not currently exist (Expert 1). Additionally, Expert 3 described how the short-term approach of current accounting systems could prevent companies from pursuing sustainability innovation:

If we are always looking at quarterly results, we're looking at annual results, and we depreciate assets using current models...there's no room for innovation unless you have such healthy margins that you are able to do this. I mean innovation becomes, it's in that same part of your balance sheet as charitable donations and CSR efforts or something like that...it's a luxury item.

For SBMI, it is important that social and environmental value is not treated as secondary to financial value. To this point, Expert 10 highlighted the Kering Environmental Profit & Loss (EP&L) statement, saying, "That's why the EP&L is so interesting because at the moment there isn't a way to measure social and environmental impact with the same importance as...companies measure finances." Five experts (1, 3, 7, 8, and 9) asserted that in a sustainable business model, companies "are actually using sustainability as a point of value" (Expert 9). Sustainability acts "as a lever to drive, not only a positive contribution to the planet, but ideally that and improvements in profitability from your operating model as well"

(Expert 7). Sustainability innovation is used to drive societal and environmental value while also contributing to the company's profitability (Experts 1 and 8).

By focusing equally on the three pillars, the company's sustainability vision transcends short-term profitability to encompass a compelling future vision for people and the planet. This vision transforms what it means to work for the company, "because it's not just about doing your job everyday, it's about doing your job everyday but also reaching towards this higher goal that's more meaningful in everyone's life" (Expert 2). Because the vision speaks to the environment and society at large, it has the power to "continually bring new interested parties and stakeholders into the venture" (Expert 3). This power to draw others into the company's work is "based on the assumption that there is a compelling vision...something that is worth doing, it is not frivolous" (Expert 3). The vision therefore seeks long-term sustainability for all people on the planet, while simultaneously defining the company's role within that vision and how it can contribute.

4.1.2 Integration

After defining the sustainability vision, a company needs to disseminate this vision throughout all of its operations. The Integration concept speaks to the alignment between the company's vision and its business strategies, such that pursuing sustainability is synonymous with pursuing financial success. The five sub-concepts for Integration include Internal Communication, Embedded Responsibility, Hiring, Training, and Measuring Social and Environmental (SE) Impact.

Internal Communication

In order to work toward a company's sustainability vision, that vision has to be communicated at every level of the organization. As previously mentioned, the sustainability vision should be compelling and easy to explain; Integration requires that the message cross social, cultural, and operational barriers so that everyone in the company can be on the same page (Expert 3). Expert 9 described what happens when management's vision has not been shared with those who carry out a company's day-to-day operations:

We heavily talk about sustainability, we heavily talk about environmental protection...but the people who are holding the orders, who decide which factory they work with, or they make the final decision – they didn't know. And they didn't care, right? So this is the biggest problem.

Four experts (2, 5, 10, and 12) identified a need for internal cross-functional collaboration. Sustainability innovation problem-solving requires multiple teams with diverse skills and expertise to come together – working in silos will hinder the innovation process and prevent individuals from connecting the dots (Expert 10). Expert 12 shared this sentiment, explaining that sustainability issues are deeply complex and require new ways of working internally in order to make change happen. As a way to detect whether this type of communication is occurring, Expert 5 suggested that such cross-functional teams would have a joint set of KPIs to measure the success of their collaboration.

Embedded Responsibility

In addition to communicating the sustainability vision, the company has to outline how each team at every level of the company will contribute to the vision. Sustainability needs to be the responsibility of all teams rather than solely the responsibility of the sustainability team – all employees need to be empowered to do their part (Expert 2). In order to drive sustainability innovation throughout a company, it needs to be integrated into key decision making areas (Expert 5) and embedded into every aspect of the company's operations (Expert 7). Expert 7 described this as “using sustainability as a part of the problem set that you're designing, creating, [and] innovating product around.” Each team needs to have tangible ways to contribute toward the company's overarching vision (Expert 7).

A key part of embedding responsibility throughout the company is integrating sustainability innovation targets into employee performance evaluations. All employees need to be given job-specific responsibilities for achieving certain sustainability innovation outcomes (Expert 12). Performance evaluations have significant influence over where people focus their attention, as described by Expert 11:

You know merchants, production people, they're not bad people, right, at the end of the day. But they're generally evaluated on factors like speed of delivery, price, quality, et cetera...so helping those folks connect the dots of how their decisions impact the whole system can be very valuable. And there's blind spots simply because of what they're expected to deliver on and what they're evaluated on.

Setting sustainability innovation targets for individuals throughout the company sends a clear message of what activities are valued and rewarded within the company (Expert 9). The value assigned to sustainability innovation is a critical factor in determining whether the sustainability vision will lead to action, implementation, and change, or if it will be ignored and people will continue operating in the same way they always have (Experts 1 and 9).

Hiring

In order to develop a company's culture so that it supports its sustainability vision, the company's vision has to be integrated into the hiring process for all employees. Companies have to screen for people who believe in their mission strongly and are willing to contribute to it (Expert 3). Expert 2 expanded on why this is necessary:

I think a fair bit of it is having...people who are passionate about the innovations that you're trying to work on, so they're more willing to, you know, be impacted by changes in process...you want to have a team that is open to that because they're ultimately working toward this goal of sustainability.

Sustainability innovation requires new ways of working and a departure from business as usual; hiring people who are willing to make those changes is critical for SBMI to take place. Expert 4 commented on how "finding the right people is the biggest challenge that any business faces" and that the hiring process must be consistent with

the company's culture in order to execute its business well. Beyond hiring employees who are passionate about the company's sustainability vision, companies need to develop a strong network of people with diverse experience, skills, and expertise.

Expert 3 explained why this is critical:

Because the fashion industry or industries in general today are so complicated, either customer-facing or manufacturing-facing or supply chain-facing, challenges are so complicated, that the only way you can solve for all of these problems – the financial problems, the logistical problems, the commercial problems, the science problem – all the things you need to solve to get a viable sustainable business off the ground and sustain it over a reasonable period of time is you have a group of people with diverse skills and talents and who are able to solve various pieces of these puzzles together with you.

One individual or even a small group of individuals would be highly unlikely to possess the skills and expertise necessary for sustainability innovation; the company needs to ensure that as it adds people to its team, it is acquiring people who will help it reach its vision. Expert 4 expanded on this idea, saying:

If you get the right people they can adapt and they can come up with alternatives and...they can execute, but they need...to be the right people, they need to be trained, and they need to be cultivated in a consistent fashion in order to do that.

To solve the complex sustainability challenges in the fashion industry, companies have to bring people onto their teams that will join them in the pursuit of their vision and contribute the types of skills and expertise for which the company has a need (Expert 2). A potential employee's aptitude for sustainability innovation should therefore be a key criterion in the hiring process for all employees (Expert 4).

Training

The cultivation of a strong internal network of sustainability innovation problem-solvers also needs to continue after the hiring process is complete. Training and developing employees throughout the duration of their tenure with the company is key to “developing a culture of innovation and a culture of experimentation within the company” (Expert 8). Expert 11 gave the example of a company whose values were made very clear to all employees: ‘get out there and fail’ and ‘take the smart risk.’ This empowered employees to try new things, knowing that they would be supported along the way (Expert 11). Training can be used to cement values such as these into a company's culture and enable employees to act in a way that upholds these values. Expert 8 called for internal education and cross-functional training so employees have opportunities to do different things throughout their career. This could increase the ability for people to move around as the company innovates and prevent people from feeling insecure as they try new things.

Four experts (2, 6, 8, and 9) discussed the consequences when this type of development does not exist and new thinking is constrained by orthodox ways of working (Expert 6). Three experts specifically mentioned the problem of employees working in silos and performing essentially the same job functions for multiple

decades. Expert 2 expressed concern that at this point, such individuals may not be aware of innovative ideas in their field or willing to try new ways of working. Expert 9 lamented that a lot of people in the industry are “too old-fashioned right now” and don’t want to change: these individuals generally are not interested in sustainability and might hold others back in their pursuit of the company’s sustainability vision. Even when the sustainability benefits of a new product or process are plainly evident, employees who feel their jobs will be negatively impacted will not support the change. Expert 8 described such a scenario:

We are trying to push out something called digital design and sampling, which means that you design a product...and the sample is approved for production without the creation of a physical sample...it’s obviously faster, less wasteful, you know less air freight and so on, so it’s a big sustainability advantage, but the people who were previously in charge of this process...they’re being disintermediated essentially. So they wouldn’t be big proponents of adopting this. They find all kinds of reasons why you need to have that garment in front of you in order to approve it, even if it’s like the same white t-shirt that you bought for the last ten years. So there’s a lot of resistance because people don’t like to change.

Developing a workforce that can adapt in the face of such changes is important for SBMI, which requires making significant changes to the way a company creates, offers, and captures value (Expert 3). Employees who do not feel secure in the face of innovative change or who do not know how to work in such an environment will

create considerable friction and drag down a company's innovation efforts (Experts 8 and 9). By highlighting how a lack of internal training and education inhibits sustainability innovation, these experts (2, 6, 8, and 9) demonstrated that employee training and development is a vital ingredient for successful SBMI.

Measuring Social and Environmental Impact

The final component of the Integration concept involves measuring the social and environmental (SE) impacts related to a company's business model. In order to know whether a company is moving in the right direction toward its sustainability vision, the company has to be measuring the social and environmental indicators that contribute to that vision. Traditional financial accounting does not capture social and environmental impacts (Expert 5), so incorporating these into a company's assessment is a pre-requisite for making improvements. Companies engaging in SBMI have to invest in measuring these impacts, even if doing so is not legally required (Expert 10). Additionally, such metrics help companies "know whether [they] are acting on the right levers" with their sustainability innovation efforts (Expert 5). Expert 7 shared this idea as well, saying, "If you can't measure, effectively, how things are going against the commitments that you've made, it's really hard to understand." As the nature of the business changes to support the company's sustainability vision, what the company measures needs to change as well because "the discipline of measuring something, whatever those KPIs may be, is critical" (Expert 4).

Nine experts specifically called for companies to measure social and environmental externalities: "what negative impacts, what value are we destroying through the products that we're making?" (Expert 11). Expert 8 suggested these might

include impacts that have “credence in the market like [greenhouse gas] reduction, water reduction...health and safety issues...you know just the standard ones that companies have to report on in [the Global Reporting Initiative].” Patagonia and Kering were cited as examples of companies who are creating innovative ways to measure direct and indirect social and environmental impacts across their entire value chains (Expert 10). Companies should also tailor their KPIs to their business models and to their sustainability innovation goals. Experts 2, 5, and 12 talked about developing additional metrics to capture impacts or improvements for re-commerce or rental models that would not be relevant for linear business models (i.e. how many garments are being re-circulated, number of users, etc.).

If the sustainability vision has been fully integrated throughout the company, the company will have identified synergies between financial and social or environmental measures. Expert 5 claimed, “A large chunk of sustainable business innovation should be measureable and assessed through financial means,” while Expert 7 had a slightly different opinion on this idea, saying:

We’re starting to get to a point where we understand that those traditional business metrics can be linked to sustainability and sustainability can be linked back to those business metrics. They’re still not unified, it can be a little wild west...I think we still have a ways to go to institutionalize them at a level that everybody is using them in the same way.

A company has to understand the co-dependencies between traditional financial and sustainability metrics (Expert 7) in order to reach that state where pursuing its

sustainability vision is synonymous with financial success. Traditional companies don't "place a great enough emphasis on measuring environmental and social impact" (Expert 6), which communicates to internal and external stakeholders that these impacts are less important than financial measures and that they are not critical to the company's success. Business models predicated on creating sustainable value then, must account for all three areas of impact by utilizing additional KPIs. Expert 4 illustrated the dilemma that ensues when such KPIs are not in place:

In an idealistic world, taking into account the system we operate in makes sense. I think that as humans our own self-interest takes over and I think we often ignore it...I think globally and overall...we've proven incapable of actually doing that...We're too self-interested in everything to do with our lives to actually think about the broader system and the impact we're having.

Due to the lack of social and environmental indicators, traditional measurements do not cause companies to naturally pay attention to or assess their negative social and environmental impacts (Expert 5). According to the experts, this is a key difference between traditional and sustainable businesses and therefore is essential to SBMI.

4.1.3 Transparency

In addition to internal integration of a company's sustainability vision, experts called for transparent external communication of that vision, the company's social and environmental impacts, and its goals and strategies for improving those impacts. The Transparency concept encompasses the public reporting of product and supply chain information and requires that this information be easily accessible for external

stakeholders. This concept includes three sub-concepts: Traceable, Publicly Available, and Commitment.

Traceable

Two experts cited the fragmented nature of traditional apparel supply chains as an inhibiting factor to sustainability innovation in the fashion industry (Experts 5 and 10). Expert 10 described a typical supply chain in the industry:

It's so globalized and fragmented, so you know even massive businesses, even billion-dollar companies only have so much control over the chain...sometimes they don't even know necessarily where, you know who their business partners are throughout the chain, which obviously that's [the] issue with fragmentation, it's really hard to track and trace where their products are made across the whole supply chain. And then also you know you may have the exact same type of product being sold by a fashion brand which might be made in several different countries, the fabric might come from another few countries and the fibers might come from a whole bunch of different places as well, so it's very globalized and very fragmented and obviously countries operate on their own different sets of rules and regulations and business and cultural norms.

Creating sustainable change in the industry involves multiple tiers of suppliers (Expert 5), which leads to significant complexity and potential barriers to success. Expert 5 expounded that “there is a bit of a lack of accountability...in the fashion industry, it's

a very opaque supply chain still, so I would argue that this...allows people to hide behind this obscurity.” Traceable supply chains prevent companies from hiding their negative impacts and also serve as proof that a sustainable business model is in place. Expert 1 suggested that traceable supply chains have the power to demonstrate the viability and reliability of the business model. Such a supply chain invites accountability and enables a company to understand the extent of its social and environmental impacts – a key component of the Integration concept. Furthermore, traceability satisfies consumers’ desire to know companies have done their due diligence to address their social and environmental impacts (Expert 1) – this is a crucial component of achieving market acceptance. Traceability enables the identification of negative impacts and therefore is central to sustainability innovation.

Publicly Available

Half of the experts pointed to public sustainability reports as evidence that SBMI is occurring. Expert 6 said one could identify SBMI “fundamentally by looking at the sustainability websites, the sustainability reports of clothing companies and seeing what case studies they’re publishing and what new achievements they’re broadcasting.” These reports outline a company’s current impacts and its efforts to mitigate those impacts (Expert 5). Expert 10 offered Patagonia and Kering as examples of companies who are reporting on their impacts across their entire value chains and updating this information on a regular basis. Third party reports also fall into this category, such as factory audit reports or assessments conducted by groups like the International Labour Organization (Expert 9). Whatever format a company uses to share information about its impacts, the act of making these reports publicly

available enables “good communication and dialogue with a whole range of stakeholders” about what the company is doing (Expert 12). This sharing of information becomes especially important in other concepts, such as Open Innovation and Alliances.

Commitment

Expert 7 expanded on the idea of publicly available sustainability data and called for companies to go one step further: making a public commitment to improve their sustainability performance. Such a commitment demonstrates a company’s dedication to its sustainability vision and can speed up the process of change:

I think that what has been really interesting in the fashion industry is that as of late, you’ve seen big brands make bold commitments. Some of them are super ambitious and far-reaching out into timeframes that are frankly well beyond a normal strategic planning cycle – you know 2040, 2050, that kind of thing. Some are a little more near-term, but I do think that making a public, quantitative commitment to carbon reduction or waste reduction...I think that those very intentionally create a level of accountability to achieve certain things in the public space, that accelerates that transition...from kind of the compliance for the sake of compliance to, hey look, we’re going to hold ourselves accountable to this and put it out publicly so other people will hold us accountable for it too.

Expert 7 identified Unilever as a company that has made several public commitments and invested in measuring its progress against those commitments. Doing so enables a company to quantitatively track its sustainability impacts and facilitates seamless communication with external stakeholders, thereby supporting the Publicly Available sub-concept. However, making a public commitment to improve is distinct from merely sharing a company's current impacts with the public: instead of ending the conversation by saying, 'Here is what we have done,' a public commitment says, 'Here is what we are going to do about it.' Other experts called for a company's sustainability innovation efforts to be seen in the public space (i.e. Expert 6), but Expert 7 is the only participant who specifically described a need for companies to make public commitments related to their sustainability visions.

4.1.4 Ambidexterity

The experts described multiple ways a company needs to be structured in order to pursue SBMI; drawing from the literature, this concept is titled Ambidexterity. This concept encompasses how a company creates space to incubate and encourage innovation separately from the core business, so that the innovation is protected from market demands during its development. The Ambidexterity concept includes six sub-concepts: Separate Structures, Access to Separate Resources, Investment, Boundaries, Expectations, and Ideas.

Separate Structure

The experts identified a need for companies to step back from daily operations, "see the big picture, and then learn from the big picture" (Expert 3). To pursue sustainability innovation, companies need to create the mind space for it – Expert 7

said, “I think one of the biggest challenges that you have in re-thinking the way you operate is having the time to actually think through it.” In contrast to sustainability issues (which appear to be slow moving), daily operational tasks related to the core business can easily consume a company’s full bandwidth. Expert 3 described this as “the tyranny of the urgent,” or “things we need to get done today which are urgent but not important.” These tasks can overwhelm a company’s resources and systems, leaving very little margin for sustainability innovation to take shape. Expert 6 shared this idea, saying, “Most companies operate at the limits of their operational capabilities and need to focus very much on core business processes.” The problem is, however, that to engage in sustainability innovation “you have to have the capability to do something alongside that” (Expert 6).

Five experts proposed the creation of an independent business unit (Expert 1), an incubator (Expert 11), a separate subsidiary (Expert 12), or some other structured team as a solution to this problem. Within such a space, companies can adopt more of a risk-taking approach and empower those teams with the right to fail (Expert 12). True SBMI entails more than just improving upon or adding onto existing business models (Expert 3). As Expert 12 described, SBMI involves significant changes:

[It] often entails different relationships between different parts of the value chain...that might mean new types of supply chains, new value chains...different financial models, different ways of generating income, different ways of defining what the value is that you’re providing to your customers and other stakeholders.

Without a dedicated space to develop these novel business model elements, innovation efforts are at risk of being stifled by legacy businesses (Expert 8). New models will not fit well inside the old models; according to the experts, companies need to create space where people can re-think the current model, perform the necessary work to test their ideas, and present their findings (Expert 7). This could be accomplished by “opening up incubators internally” (Expert 11) or even by “setting up a new business unit or even a subsidiary” (Expert 12) externally. Such spaces provide the margin for innovation that most companies lack (Expert 6) and ensure innovation efforts are not overwhelmed by daily operational tasks (Expert 3).

Access to Separate Resources

In addition to creating separate spaces for sustainability innovation to develop, companies need to ensure these spaces have access to adequate financial and human resources. Expert 6 described this problem of sustainability innovation projects relying on the same resources as the core business as ‘resource distraction’:

If you start alternative business models and you start pilots and you start trials, then it’s a drain on your main resource. It becomes...a stone in your well-oiled machine, and it can become very unpopular very quickly because it gets in the way of people trying to perform their core functions.

To truly champion sustainability innovation efforts, companies need to “reduce resistance from the old staff” (Expert 1), or the individuals working on the core business, and ensure these individuals can still execute their tasks without fearing they

will lose access to resources. Within the fashion industry, “the hypercompetitive and...relatively low margin nature of the industry might mean that there’s perhaps less spare...cash available for this type of innovation” (Expert 12). For this reason, six experts recommended that sustainability innovation pull from separate resources than those used by the core business. For example, Expert 1’s company sets up new profit centers for sustainability innovation so that “the problem[s] of these new profit centers [do] not affect the performance of the old sectors.”

One method for accomplishing this could be “seeking alternative financing” (Expert 12) for the subsidiary devoted to sustainability innovation and ensuring “budget lines are dedicated to experimentation and trials” (Expert 11). Experts 3, 5, and 6 recommended allocating a team of people devoted to sustainability innovation: providing “a small group of people who are dedicated and hard at work for this” (Expert 3). This team needs to “be equipped with a pool of money so it can actually start implementing” (Expert 5) sustainability innovation ideas. Expert 6 suggested companies could also rely on third-party expertise (on technological breakthroughs, for example) to acquire the type of capabilities necessary for sustainability innovation. By providing a dedicated team and equipping this team with necessary resources, a company can limit the possibility that sustainability innovation will “distract [it] from [its] core tasks” (Expert 6) and reduce resistance from other teams within the company. Therefore, in addition to providing a space to pursue innovation, a company needs to ensure it is financing and staffing that space with its own resources (Expert 1).

Investment

In conjunction with the need for access to separate resources, SBMI also requires a willingness to invest in sustainability innovation and make the leap from idea to implementation. A big part of successful innovation is experimentation; putting money behind such experimentation is a tangible sign that SBMI is occurring within a company (Expert 12). Companies that have low follow-up of innovative ideas will be far less likely to achieve successful SBMI (Expert 1). Investing in innovation will often mean “inject[ing] capital into programs where the outcome is not necessarily certain, so [companies] need to be willing to speculate in order to champion new innovation and new business models” (Expert 6). Pursuing innovative ideas requires making some kind of initial investment (Expert 1) and understanding that those investments might have a longer pay-off period than what might be possible within the core business (Expert 1). Expert 8 described how “a lot of new innovation these days uses new technologies, and technology necessarily has a longer payback period because you actually have to make a big upfront investment.” This willingness to invest and to accept a longer return timeline will be evidenced by actual financial commitments being made to test innovative ideas.

Additionally, a company pursuing SBMI will be investing in research related to innovation projects. This could mean the company is running pilot projects and “trialing out...some quite radical ideas within their businesses and supply chains” (Expert 10). Expert 2 commented on how this is especially important within sustainability: “I think it’s really...a lot of leg work, it’s a lot of R&D that needs to be done, whether it’s on the textile front or looking at circularity.” Many elements of sustainable business models do not currently exist – Expert 2 described this reality, saying, “A lot of the new developments are just not commercially viable

yet...generally if you want to be a pioneer and launch a new fabric, you do have to contribute a large sum of money to be kind of a sponsor of that.” Therefore, companies that are pursuing sustainable business models have to invest in research and make learning a top priority. Expert 1 shared this belief, saying, “In my work with...environmental or social compliance, of course I need to have this kind of knowledge, and if I need to develop this kind of knowledge, I need to...invest in the sources to develop this knowledge.” A key indicator of SBMI, then, will be investment in research and innovation pilots (Experts 10 and 12).

Boundaries

Building on the Investment sub-concept, companies need to define their risk tolerance for investing in sustainability innovation projects. Expert 6 cautioned that in the same way that a lack of investment in sustainability innovation can stifle a company’s progress, the opposite could be problematic, too:

There can be the inverse of that where you focus on new business model development to the detriment of your core processes and that doesn’t serve the needs of the new business model very well either, because the moment that [sustainability innovation projects] seem to compromise the effectiveness of your existing capabilities, then that will kill them quicker than anything.

Becoming too experimental can “damage your tried and tested ways of working, which then leads you to go into full retreat on the new business model” (Expert 6). While only one expert discussed the possibility of taking innovation efforts too far,

other experts expressed a need to establish boundaries for innovation in order to gain widespread support within the company. For example, Expert 1 advised setting a budget and clear milestones to help people “understand the worst scenario...and make top management feel better [about] investing in these projects.” Expert 11 also expressed a need to define the potential worst-case scenario as a way of gaining support and buy-in for sustainability innovation:

You know you’ve done your homework, you’ve done your assessment, and certainly for some of the more analytical types in an organization, you know hopefully that will drive some confidence and perhaps some budget as well.

Expert 7 supported this idea, saying, “I think that there’s a balance...I think we commit to things that are a stretch, but we can see some path toward achieving.” Overall, the experts advised taking smart and calculated risks, outlining how much the company is willing to give up (i.e. how much time and money it is willing to spend), and conducting the necessary research to present a strong case for pursuing sustainability innovation.

Expectations

Similar to how a company needs to have a different risk tolerance for innovation compared to its tolerance for core processes, a company also needs to have different expectations for the return on innovation projects compared to the return expected by the core business. Seven experts highlighted how SBMI “may be

remunerative on a longer timeframe” (Expert 8). Expert 6 described this lack of immediate financial return as the number one barrier to SBMI:

Many of these alternative business models are clearly nascent, they take time to get going, they can be economically sub-optimal in the short term, and that can lead to their cancellation or people being unwilling to try them in the first place.

Expert 8 shared this concern and advised that “you need to somehow ensure that you don’t discount the value of the innovation simply because the market hasn’t moved yet.” Expert 6 shared an example of one company that will let a concept it believes in run for five years – even without hitting the criteria for success – simply to give it time to breathe and grow. Many up-front investments in sustainability innovation will pay off, but they will pay-off over a longer period than is typically accepted in traditional businesses: for example, investing in solar energy will create an up-front cost, but it should lower costs in the long run (Expert 5). Sustainable textiles might cost more money or have longer lead times before they scale beyond niche markets (Expert 2); SBMI requires the patience to pursue such sustainable alternatives and give them time to scale. However, “not many business owners are willing to wait” (Expert 1). Expert 7 described the temptation to move on quickly if innovation doesn’t yield a return within the same timeframe as expected by the core business:

Having the patience to scale something...is even more of a challenge than the commitment. I think for us, we’ve been committed [to sustainability] for a long

time, we're so driven and so urgent that if we can't scale something quickly...we get attention-deficit disorder – we want to move onto something else really quickly, too. So I think that the commitment to be patient enough to scale a solution that has real impact is really important, and can be a big obstacle. (Expert 7)

To create this type of patience, Expert 6 suggested a company “lower [its] internal rate of return requirements for new business model development so they have a lower threshold, which means that the pressure to cancel them [and] also to not start them in the first place is [lower].” Four experts commented that these new requirements might be “different depending on the different stages of development” (Expert 3) for sustainability innovation projects. Expert 8 explained that at times, it is difficult for companies to really understand what SBMI looks like and what it entails:

You know we never know what an innovation is until after it's already existing, and then we're saying, ‘Well why didn't we think of that?’ So we need some better tools for identifying the intermediate steps...that companies need to observe while, you know, being on the road...It's like you don't see it immediately, but there should be some signs...we need to understand...what exactly is happening, you know it's not just people with crazy ideas.

Expert 12 expanded on the difficulty of trying to capture sustainability innovation:

I would say it's very, very difficult, and I think the reason for that is that when we are looking at genuine business model innovation and genuinely sustainable solutions, you're not talking about sort of isolated things, isolated outputs, or linear processes where output X leads to outcome Y leads to impact Z...you are working in an environment where there's lots of different factors and different stakeholders or different businesses might be playing different roles in making that change happen, so to attribute that can be quite difficult.

Sustainability innovation efforts often cannot be captured using traditional measures of success; companies need to have "some new way to account...for innovation [using] a more holistic, more long-term view" (Expert 3). New measures for sustainability innovation can help define a company's expectations for financial returns and communicate the differences between sustainability innovation projects and the core business to all employees.

Five experts highlighted another group of stakeholders whose expectations need to be addressed: shareholders. Expert 12 described a potential dilemma for shareholder-owned companies:

Shareholder-owned companies are sort of by their nature compelled to grow, if you like, and compelled to sort of maximize profits because if they don't maximize profits to their shareholders, their shareholders you know, by law, are allowed to sort of hold them to it and say, '...You're paying suppliers more than the industry average, well why are you doing that? You should be giving that money to us, we own you' sort of thing.

This pressure to secure immediate financial return can decrease or even eliminate a company's focus on sustainability innovation, as captured by Expert 10:

At the end of the day their primary aim is to provide shareholder value and profits, and you see this happen especially when it comes to companies maybe who aren't doing so well, you know quarter by quarter, they end up fighting to survive, and that means innovation goes out a window, which in the long term probably isn't very good business but in the short term is probably what they feel they need to do to survive in that moment.

Such short-term thinking is exacerbated by what Expert 11 described as “a system of share traders rather than shareholders, that are...looking for the next opportunity.” These stakeholders' desire for immediate financial return, coupled with the amount of control they have over a company's decision making, can be a serious hindrance to sustainability innovation. Expert 12 suggested “other sorts of ownership structures like private ownership or cooperative ownership [would] enable more freedom for companies to...distribute value in a...more fair and equal way.” Otherwise, short-term thinking can easily overrule the potential long-term benefits of sustainability innovation (Expert 5). Companies need to be mindful of this possibility when setting and communicating their expectations for sustainability innovation internally and externally (Expert 6).

Ideas

Beyond providing the space and resources to pursue sustainability innovation, committing to these efforts through financial investments, and defining the boundaries and expectations for such investments, companies need to enable employees at all levels of the organization to contribute their ideas. Expert 3 asserted that the biggest barrier standing in the way of SBMI is the lack of quality ideas rising to the surface. Expert 10 suggested this might be due to a company's structure:

You know with really hierarchical companies – especially in the fashion industry – I think we see those companies investing less in innovation, you know [they tend to have] less innovative ideas kind of...rising to the top and becoming a reality.

Instead, more lateral structures might give people more of a voice and a greater ability to suggest innovative ideas and bring them to fruition (Expert 10). Expert 8 suggested that using “different platforms to generate ideas from the employees would also help overcome...people's tendency to want to do the same things year after year.” Creating an avenue through which employees at any level of the organization can contribute innovative ideas enables a company to reap the benefits from its integrated hiring and training processes (see the Integration concept above):

You can find all the great people but if they can't execute on the ideas or the vision...[that's] the biggest challenge for any business to sustain itself over time is continuous execution...determining that product-market fit all comes back to people at the end of the day too, it all comes down to executing on the

ability to assess what's happening in the market and then translate that into...business.

If the company has already integrated its sustainability vision into its hiring process and trained its employees to engage in sustainability innovation, its next step is to equip these employees to contribute their ideas. Establishing this type of feedback loop is key for a company to benefit from having diffused innovation capabilities throughout its entire organization (Expert 7). Sourcing innovative ideas from employees themselves also ensures sustainability innovation ideas are “grounded in the business reality...as [the company is] trying to move things along the innovation continuum” (Expert 7).

4.1.5 Resiliency

Resiliency refers to a company's ability to pivot quickly, adapt to a changing marketplace, and to learn and recover from failed innovation attempts. Prerequisites for developing a resilient organization include establishing a sustainability vision that keeps the company pointed in the right direction, integrating that vision throughout all job functions, and creating a space within which innovation is encouraged. Resiliency consists of four sub-concepts: Pivot, Learn, Challenges, and Sense of Urgency.

Pivot

The experts expressed a need for companies to be ready and able to adapt to a changing external environment. Expert 12 illustrated why this ability is necessary:

You know, the world is changing and there are some things we can be very sure about, and there are the variables that are really unknown and quite unpredictable – and some of those factors can interact as well in quite unpredictable ways to give different outcomes.

Expert 11 asserted that this is especially true within the fashion industry. The industry as a whole is shifting due to the impact of Amazon, online retailing, and other disruptions; many companies have developed a survival mentality to cope in this new environment (Expert 12). Such changes are also apparent within sustainability. Expert 7 pointed out that SBMI implies a company's journey that is very much marked by change: this journey begins with compliance, matures into stewardship, and culminates with full integration of sustainability into a company's operations. While such changes are taking place within a company, external changes are occurring as well. Guidelines and frameworks for sustainability impact reporting have transformed over time, as noted by Expert 1:

It is always changing and can be easily outdated; maybe even [after] two or three years, everything has changed...In the past when we talk[ed] about social compliance, okay, SA8000 [was] quite common. But nowadays, people seldom talk about it...many buyers have their own standards rather than just follow SA8000...these standards are actually changing.

Expert 1 also noted how these changes to reporting requirements are often driven by consumers: as consumer awareness of sustainability grows, their expectations for what

types of information companies should share will change too. Adapting to these fast-changing requirements is an important capability for achieving SBMI.

To capitalize on this information and make the necessary changes, companies need to have flexible processes in place to respond quickly. Expert 2's company has this capability: "if we see something is not working, we can pivot and...work on something else." Expert 2 also acknowledged that this is likely to be easier for a start-up that was built on speed. However, larger, less nimble companies are not incapable of engaging in this process of learning and responding: Expert 8 asserted these companies can "learn from product or service innovation and by having one small example of success, you can basically build around it." Using past innovation as a reference point can help companies determine whether their current strategies are still valid, allowing them to shift strategies when necessary (Expert 12).

Learn

A key marker of SBMI is a company's ability to recover and learn from failure. Six experts discussed the reality of failed innovation attempts, saying companies need to have a tolerance for failure (Expert 8), to give employees the right to fail (Expert 11), and to develop tenacity, or the ability to get up and try again (Expert 3). This last point is critical because "that's how most [companies] die: they can't recover" (Expert 3). Failure is inherently part of the SBMI process, as explained by Expert 7:

If you're attacking a problem set, there are a whole bunch of different ways to solve a particular set of problems. And inevitably, you're going to go after one

or two or three or more that fail, and your hit rate is certainly going to be a smaller percentage than your overall failure rate. And you have to...continue to charge ahead...

However, it is important to note that the act of failing is not the most important component: rather, it is the knowledge gained from the experience of failure. Expert 7 captured this point:

There are companies out there that have set certain targets around specific things, whether it's carbon or water usage, that haven't achieved it. Or have gone in the other direction – the wrong direction. And that doesn't mean that they abandon their commitment; that means that they double down on what the sources of that failure are so they can continue to progress toward their commitment.

Expert 3 suggested that a company might have “certain tools and mechanisms, or ways in which [the company] can learn from the experiences that [it has].” Such tools can capture what a company has learned – both good and bad – so that this information can then be incorporated into model refinement or changes (Expert 3). The focus here is on purposeful failure and ensuring that the company is always making progress – either by innovating its way forward or learning from what doesn't work.

Challenges

Part of the ability to recover and learn from failure is anticipating the challenges of SBMI. Expert 7's comment about a company's hit rate being smaller than its overall failure rate reveals that companies need to develop a resilient organization that can continue to charge ahead. This capability comes from accepting that failure will occur:

Understanding that this is, this is going to be a repeat process. You don't hit a home run, or very rarely do you hit a home run straight out of the gate. You sort of accept that there will be course corrections, mistakes, things you have to do along the way. (Expert 3)

Developing this kind of understanding and acceptance can be "quite a lot of effort and not always a comfortable space" (Expert 12), especially for companies that want to maximize profit and certainty of success. However, companies that engage in SBMI will not only give people the right to fail, but will "empower people to try new things and be supported on that journey" (Expert 11). These companies expect SBMI to involve multiple cycles of innovation (Expert 11) and be marked by continual course corrections (as noted by Expert 3). By eliminating cultural barriers that prevent these innovation cycles from occurring (Expert 12), companies can establish an environment where employees expect such challenges and feel equipped to handle them. Such a workforce will be willing to get uncomfortable to try something new and reach toward completely novel value proposition, creation, and capture mechanisms – the key components of SBMI.

Sense of Urgency

Three experts (3, 4, and 5) identified the general lack of urgency surrounding sustainability as a potential obstacle for companies. Expert 3 illustrated this dilemma:

I think most of the time the challenge is a lack of urgency, or the ‘Why should I change?’ Because...the types of challenges that we face, certainly around big issues like sustainability, are not fast moving. They sort of happen over a long period of time...they happen incrementally and...they creep along. It is not a burning, compelling thing.

Expert 4 shared this opinion, saying that in response to recent reports on climate change and the impact humans are having on the environment, “No one’s paying attention, no one’s changing their behavior, no one’s doing anything.” Companies struggle with the same type of inertia, as noted by Expert 5: “why would you want to change unless there is pressure?” This problem is especially salient for large organizations, which, in the absence of a major crisis to deal with or a very forward-looking CEO, might get stuck in a ‘business as usual’ mindset (Expert 5).

For these reasons, companies attempting SBMI need to manufacture a sense of urgency. This could be in the form of time-bound commitments: Expert 7 noted how companies that make commitments to improve their impacts by certain dates can accelerate progress on the changes they’re looking to drive. As noted in the Commitment sub-concept of Transparency, making a public commitment increases the pressure to act because external stakeholders can hold the company accountable to its plan. Public commitments also elevate sustainability to a level of importance on par

with financial commitments and communicate the company's dedication to sustainability. Expert 7 also noted how connecting sustainability to business success could help create this sense of urgency:

The reason we did sustainability [in the past] was very different than the reason you would do sustainability now...sustainability is not a nice-to-have, check-the-box, you know, good thing to do for the planet anymore; it's really a business imperative. And it's really an indication to me of the level of sophistication – or not – of a particular business.

Due to the “lack of fast-moving reasons to rapidly change” (Expert 3), companies need to generate the belief internally that change is imperative. This belief will likely stem from the company's sustainability vision: this serves as the source of the company's motivation to act (Expert 4). Generating momentum around sustainability issues and reaching the company's vision also drives recovery from failure (Expert 7), and therefore is a critical component of SBMI.

4.1.6 Mindfulness

An important aspect of SBMI as noted by the experts is an awareness of the distance between where a company is currently and where it ultimately wants to go (its sustainability vision). The Mindfulness concept captures the willingness of a company to challenge its assumptions about its current business model and to always be scanning for changes that will impact its ability to reach its sustainability vision. Mindfulness is composed of three sub-concepts: Gap Analysis, Opportunity Orientation, and Critique.

Gap Analysis

The creation of a sustainability vision (see above) implies that there is a gap between where a company currently is and where it ultimately wants to be. Four experts described how companies need a thorough understanding of their starting point if they are to engage in SBMI. Expert 10 said, “If you don’t know what you’re doing already and you don’t know what kind of impact you’re having...if you’re not measuring those things, you don’t know how you’re going to move forward.” While Expert 2 talked about a company’s starting point as its current social and environmental impacts, Expert 6 expanded this idea to include the context in which the company currently operates: “If you’re going to understand [SBMI], then I think understanding conventional business practices and paradigms, and crucially the requirements that businesses have to meet, is key.” Expert 3 treated the starting point as a measure of “how much trust or lack of trust does your brand own,” describing it as a liability and asset assessment.

An important part of the gap analysis is building a strategy to close the gap. Expert 12 called for companies to have a robust theory of change: “understanding what is the change that you’re trying to drive [and] how does that change occur.” Developing this understanding requires feedback loops where employees can constantly assess what they’re doing, review feedback, and make necessary course corrections: to “tweak their approach and keep evolving that so it delivers toward that [sustainability] vision” (Expert 12). Expert 3 described this as being “disciplined enough every now and then to look and see, you know, make some assessments about, ‘Are we making progress?’ and to do it in a way that’s honest and objective.”

Establishing strategies and measuring the company's progress against those strategies, then, is a crucial step that enables a company to work toward its sustainability vision. The act of measuring impacts is covered by the Measuring Social and Environmental Impact sub-concepts of Integration. Therefore, the focus of this sub-concept is creating a plan to get from a company's starting point to its vision, and assessing its progress along the way to make sure it stays pointed in the right direction.

Opportunity Orientation

A potential pitfall for companies involves focusing on past success and clinging to what has worked in the past. SBMI requires looking toward the future, but “a lot of companies don't think that way: they tend to be thinking about optimizing their current approach rather than thinking about completely different approaches” (Expert 12). This is especially an issue when companies have been successful because if products or processes have served them well in the past, it becomes difficult for them to try something different (Expert 1). While incumbent companies tend to fall into this type of thinking due to their established ways of working, start-ups are not immune. Expert 10 explained why:

I think you'll see companies who maybe started off quite innovatively and that's really how they came into being, and eventually, you know, they have one or two innovations and that sets them on a path of massive success. And then they kind of fall – they end up being stagnant.

Resting on past success blinds a company to changes in its external environment by creating a false sense of security, or a mindset that their success is immutable. Without being mindful of external changes and assessing the company's ability to survive in the future, companies will suffer serious decline and eventually bankruptcy (Expert 12). Kodak was referenced by Expert 12 as a classic example of a company that suffered because of this mindset:

Kodak basically said, 'Well no, actually, we sell film. That's what we do, and that's what we're going to do. We sell cameras and film for people to take photos and have them printed physically.' And...Kodak filed for bankruptcy because there just isn't a market for that anymore, other than [a] kind of retro niche market, which is not...mainstream anymore. So they were warned about the future but they chose not to...act upon it, because their current business model back then was still working and it was like, 'Well, why would we bother? We don't need to change yet, so that just sounds like a load of hassle.'

The example of Kodak also illustrates why companies need a sense of urgency to engage in sustainability innovation (sub-concept of Resiliency). Without a conviction that sustainability innovation is material to the company's future viability, the tendency is to protect current ways of working. Expert 6 suggested this could also take the shape of fear, or the belief that change "will cannibalize or damage your core business model." When new models emerge, Expert 6 described how companies might react in two distinct ways:

If you look at clothing rental, if you look at clothing re-commerce, then I think many players could be very frightened that this could lead to an erosion of new clothing sales. Whereas I think that a better attitude would be, ‘Well how do we generate the maximum possible economic value from clothing?’ And be less concerned about how we do it. You know there’s clearly a need to keep economic growth going, that’s what companies do. But the means by which you do it I think you should be more open to.

To overcome this temptation, companies need to develop the discipline of “step[ping] back every now and then [to] see the big picture, and then learn[ing] from the big picture” (Expert 3). The purpose of this exercise is to identify the external drivers of change, such as “climate change, resource scarcity, consumer expectations about transparency, [and] new international laws about human rights in the supply chain” (Expert 12), and assess how these changes will put pressure on the company’s business model and the broader industry. Companies need to be mindful of landscape trends, or long-term changes that largely happen in the background, and niche trends, or innovations happening at the margins of the market, and how both types of trends relate to the regime, or what is currently mainstream practice in the industry (Expert 12). Identifying these three elements is key to understanding the context in which the company is attempting to innovate.

Experts 4 and 11 called for companies to practice active listening skills in order to pick up on these trends. Without these skills, companies get stuck or miss key information (Expert 11). Expert 4 described how companies need to listen to the

market and, more specifically to the customer, with a sense of expectation that the customer's needs will change:

You've got to listen to the customer, and you have to be willing to listen to the customer even in the face of, at times, your own instincts saying, 'No, no I'm convinced the market wants that'...more times than not, failure to listen to the market is a reason for business model innovation not being successful. So, therefore, by listening to the market, listening to what consumers want, you have a better chance of success of developing business model innovation.

A key component of active listening is "a willingness not to simply dismiss things at first hearing because they sound eccentric or weird or alternative. If we want truly transformative change, then we have to contemplate things that superficially may appear to be undoable or impossible" (Expert 6). SBMI involves the creation of new models that do not fit within the current business model logic; therefore, companies have to be open to new ideas in order to engage in this type of innovation (Expert 8). Arrogance, or believing that a company's current model is the right or only model, can lead companies to miss important new developments that have direct implications on their future success. Expert 11 described the opportunity to change a company's mindset so that it encourages innovation to take shape:

In the past, designers...[felt] their palette [was] being restricted, you know, their creativity [was] being restricted by constraints related to sustainability, rather than thinking about the palette – you know the color palette you already

have – being extended...because there might be more choices by adding some of these other sustainability opportunities.

Such changes might not be welcome within a company where the focus is on optimizing the current model, because those changes might not fit within the current model (Expert 6). Instead, by approaching change as an opportunity to transform or create new value in new ways, companies can use change as a catalyst for sustainability innovation (Expert 11). Horizon scanning can help companies understand the changes taking place and enable them to proactively adapt their strategies and capitalize on new opportunities.

Critique

Building off of the Opportunity Orientation sub-concept, the experts asserted that because the external environment is constantly changing, companies have to be willing to critically assess the fitness of their current models. “The business world is changing, and the consumers’ requirements [are] also changing...regulations [are] also changing” (Expert 1); understanding that these changes are occurring should alert companies to the reality that without new models, their business will disappear (Expert 1). For companies engaging in SBMI, it is necessary to realize “our profit-only driven models and our linear models are no longer fit for purpose and will not meet the needs of our future, for people and for the planet” (Expert 10). Expert 12 expressed a similar idea:

I think often it is about saying, actually, the world around us is fundamentally changing and the business models, the value chains, the ways that industries work, is often designed, what 200 years ago in the Industrial Revolution? I mean, okay we've tweaked it since then, but essentially the principle of a linear economy where you take stuff out of the ground, make it into a product, and you throw it into landfill at the end – that's a 200-year old and increasingly archaic and unfeasible system. So actually a lot of these problems we need to go in with fresh, child-like eyes and you know think about...how do we redesign this stuff?

Companies have to overcome the arrogance (Expert 11), complacency (Expert 12), and false sense of security generated by past success; it is important to recognize the fallibility of current models and the need to periodically reinvent them (Expert 3). Expert 3 looks for companies to be “in love with the idea but not in love with the model,” meaning they understand there are many potential models that would help them reach their desired destination. Within the context of SBMI, this desired destination would be a company's sustainability vision.

Expert 4 called for companies to “challenge [their] own set of assumptions and be willing to have [their] own assumptions be wrong.” For example, in some situations, large, successful businesses might be able to learn from smaller companies that enter an industry by creating value in new ways: these smaller voices might be capable of incredible impact because they aren't tied down by established models. Expert 7 described how large companies are prone to creating their own momentum, where “people get very focused on running the business day-to-day.” Stepping out of

this mindset and asking questions like, “Is this really the way we ought to be doing it?” and “What is this going to look like ten years from now and should we be orienting that direction rather than [focusing on] what should we be doing right this second?” is incredibly challenging, but necessary for SBMI (Expert 7). Near-term obligations can easily distract from this type of assessment, which is why generating an internal sense of urgency around sustainability innovation is necessary (see Resiliency concept). Expert 4 highlighted Under Armour CEO Kevin Plank and how he has instituted a culture that highly values this type of self-critique:

Kevin Plank...has one sort of expression which I love...I'll paraphrase it but I think it goes, 'If I ever hear anybody utter the words 'that's the way we've always done it,' they will be fired.' Because he wants you to constantly be challenging the status quo and ensuring that you're, you may end up doing the exact same thing in the exact same way, but [you have to be] willing to kind of challenge what you're doing. So I think that's critically important because otherwise you get left in the dust and left behind if you're not paying attention.

Companies need to “iterate as much as possible” (Expert 2) and engage in continuous innovation (Expert 4), treating one product, process, or technological innovation as a means to the end rather than as the destination in and of itself (Expert 1).

You constantly have to be reassessing...product-market fit because the competition will move past you, and if you're not doing something that's

keeping up with what the market wants or needs or demands, then someone else will. (Expert 4)

The danger of resting on past success, as briefly mentioned in the Opportunity Orientation sub-concept, is that a company will miss signs that the market is changing and now requires a different product or service solution (Expert 4). Expert 10 described how this can be a common issue for family-owned companies:

You see this a lot with...for example...manufacturers or even fashion brands in Italy – not just in Italy, but you see this particularly in Italy I think – you know where people have been running a business for over 100 years and in a particular way, with a particular recipe, [a] particular set of rules and structures, and you know are comfortable and confident with running their business in that way...so they're kind of reticent to change and that is a huge hindrance.

This type of thinking is not exclusive to family-owned companies; the same mentality led to the demise of companies like Kodak and Blockbuster (Expert 4). Often the work of assessing a business model's future fitness requires digging deep into the interdependencies of various processes and activities; a company has to be willing to do this to identify potential model weaknesses. Furthermore, a company's sustainability innovation efforts have to address the root causes of sustainability issues: these often have ties to a company's business model, which can be very difficult to admit. Expert 10 shared an example to illustrate this point:

An example where it didn't go as expected was around...H&M and their living wage road map. So they set a road map to pay a living wage to workers in the supply chain by 2018...and they were not able to achieve that...but now...they're going to have to shine a light on some of the issues that a lot of fashion brands have not held up, you know, a mirror to yet, especially around their own purchasing practices and the kind of pressures that they place on suppliers. If they're going to have an honest conversation actually to solve the living wage issue, then a lot of the solutions are going to have to come from them challenging their own assumptions about the way they...do business and about how the market status quo has worked for awhile.

Companies need to regularly engage in this type of self-critique to engage in SBMI, precisely because SBMI “is more than just innovating a new product, service, or process...it's about new ways of creating value” (Expert 12). Being willing to critique current models and adopt a beginner's mindset can help companies identify and develop innovative models that address their sustainability impacts and move them closer to their sustainability visions (Expert 3).

4.1.7 Systems-Thinking

Systems-thinking involves a holistic approach to sustainability innovation, in which the company considers its impacts within the context of ecological carrying capacities and social floors. Such a mindset requires an understanding of the various systems in which the company operates; the Sustainability Vision, Integration, and Mindfulness concepts enable this type of understanding. Systems-thinking involves

five sub-concepts: Lifecycle, Circularity, Upstream, External Context, and Consumer Behavior.

Lifecycle

SBMI necessitates “paradigm shifts in the way that we do business” (Expert 11). Companies engaging in this type of innovation need to take a holistic approach to assessing social and environmental impact (Expert 10). Part of obtaining this understanding involves identifying impacts throughout the entire lifecycle of the company’s product or service offerings, as Expert 11 explained:

[Shifting the way we do business means] truly trying to drive as much value creation and as [little] value destruction as possible. And that’s right along, you know when we talk about [the] value chain...all the way upstream from materials, raw materials, to customer – to repurposing and re-use. I think you have to...hit on all of those various nodes in the network to really drive sustainable business forward.

Expert 10 suggested that conducting lifecycle analyses can help a company capture these impacts, but most experts highlighted the importance of recycling and regenerating materials: they discussed an increased focus on the end-of-use stage in the apparel lifecycle. Expert 2 shared, “We have a lot of garments out there that are discarded way before their lifecycle is actually over.” Expert 6 discussed take-back programs being offered “by fashion retailers to reclaim clothes and have them recycled, repaired, [or] upcycled.” Companies like The North Face are now offering to

repair more expensive garments that customers have purchased, and entirely new business models are springing up around “the recovery, separation, and regeneration of yarns” (Expert 6). Expert 5 mentioned this as well, specifically the innovation happening around recycling for polyester and for cellulosic fibers to achieve virgin-type quality from second-use fibers.

The Lifecycle sub-concept builds off of the Measuring Social and Environmental Impact sub-concept of Integration. Lifecycle specifies, however, that companies have to have a holistic approach toward measurement that includes every possible impact associated with their product and service offerings. This “is a foundation that any organization needs to have in place before really looking at the innovation side of things” (Expert 5). Accounting for impacts across the entire lifecycle enables companies to perform a gap analysis of the distance between their current reality and their sustainability vision; without this step, it is impossible to develop strategies that effectively address their sustainability impacts.

Circularity

By analyzing the impacts across the entire lifecycle of a company’s product or service offerings, it should become evident that “our linear models are no longer fit for purpose” (Expert 10). Expert 10 described the reasons behind the shift toward circular models:

So the fashion industry is classically designed in a kind of take, make, dispose sort of linear model, which creates a lot of waste and a lot of inefficiencies. And actually a lot of resources are wasted throughout the process and at the

end of the process, and I mean that by material resources but also with human resources...and so a lot of new business models are trying to move more in a circular system direction, meaning obviously that waste...is minimized throughout the whole system, so that actually resources are used in a way that can be regenerated.

The experts identified the creation of circular business models as a key goal for SBMI. Engaging in sustainability innovation should help fashion “move from this industry that is built on this linear take, make, waste model into something that really allows us to reuse...whatever might be left...and put this into new cycles” (Expert 5). While Circularity is similar to Lifecycle in that it also seeks the ability to re-use materials and keep clothing out of landfills, this sub-concept is different in that re-use is built into the model and planned from the beginning rather than being an end-of-pipe solution to a problem created by a linear business model.

The experts discussed multiple new ownership models that would prolong the useful life of a garment, such as renting (Experts 2, 5, 6, and 10), leasing (Experts 5 and 12), and re-commerce (Experts 5, 6, and 10). Expert 12 highlighted MUD Jeans’ Cradle to Cradle certified jeans as an example:

Cradle to Cradle is the circular economy approach where resources keep going around in the economy rather than [being] sent to landfill at the end of life. So with [MUD], you can lease a pair of jeans for 12 months, and then when [customers] have jeans sent back to [MUD] at the end of that 12 months,

they're upcycled into vintage designs, one-offs, or recycled into material for new pairs.

The goal for circularity is to create “a completely closed loop: a circular model where only good flows are...circulating” (Expert 5). The potential for such a model to drastically reduce – or even completely eliminate – negative social and environmental impacts makes it a primary goal of SBMI.

Upstream

A critical component of a company's business model is its supplier relationships; therefore, a company must understand its impacts on upstream suppliers to engage in SBMI. A new, sustainable business model “must have the ability to deliver value to the stakeholders” (Expert 1). Principal among these stakeholders, are the workers throughout the supply chain. Expert 1 said, “I think [benefiting the workers] is very important, and they understand that they will all be benefitted.” A company has to be able to connect the dots for their employees and demonstrate how their decisions impact people on the factory floor (Expert 11). In order to do this, however, the company first needs to identify and understand those impacts. According to Expert 1, this likely requires being in direct contact with workers, both to understand how the company negatively impacts workers and, alternatively, to educate workers about how they will benefit from changes to the business model.

Delivering value to upstream stakeholders requires sustainable sourcing strategies. When assessing a potential manufacturing partner, Expert 7 asked, “What's their relationship with their suppliers?” In this way, Expert 7 would work backwards

through the supply chain to find like-minded business partners who shared the conviction that sustainability is integral to business success:

The way I would explain [sustainability] to them is how they interacted and engaged with their labor force, and how they treated their immediate environment and things that they did to improve their environmental footprint in any range of impact areas, was not something that they should do because we told them to do it, or even that it was generally good for the planet, but it was an indication of how sophisticated and evolved they were as a business partner. Because these things are indications of management sophistication, and an enterprise view toward value creation and profitability.

SBMI requires value creation transformation, which might necessitate new relationships with new suppliers (Expert 12). By understanding a company's upstream impacts on suppliers, the company can engage in new supplier relationships that advance its progress toward its sustainability vision. Such relationships could be used to help solve shared sustainability issues (as will be discussed in the Collaboration sub-concept of Open Innovation and Alliances), but ultimately the nature of these relationships and the impacts on the people involved in these relationships also have to contribute to the company's vision. The only way to ensure this is happening is to identify and track the company's upstream impacts.

External Context

Four experts asserted that in order for SBMI to be successful, companies would need to advocate for change outside their own business models. Many companies have started recognizing that the problems they face “are just too complex and systemic” and, therefore, will require “profound systemic change rather than just isolated solutions” (Expert 12). Likewise, companies that want to pursue a sustainable future are facing significant barriers to successful change because the industry, by and large, “is still too old-fashioned right now” (Expert 9). Expert 8 described why focusing on the external context is critical:

The thing is, markets are not scientific, okay? They are driven by policy, and they are driven by the media, and they are driven by the largest players. And so whether a business model...succeeds is determined by its market context. So we need to understand that it's not just the genius of the business model, but also the other exogenous factors at play...which is why you know some business models, they fail in one context but then they may succeed in another.

These factors are “key to whether a mere new development becomes an innovation...in a business model sense and whether it will change the industry” (Expert 8). As Expert 12 described, there is a need to look at how a broad range of elements fit together and contribute to the external context. Then, companies need to seek to understand their role within that context and how they can interact with other stakeholder groups to start making changes.

Each of these four experts offered suggestions for how companies could work toward systemic change. By joining multi-stakeholder initiatives, companies can

invest together to solve some of the most pressing sustainability issues (Expert 10). Compared to collaboration, which might take place between two companies, multi-stakeholder initiatives bring together diverse perspectives and have the power to shift entire industries in new directions. In addition, participation in industry-wide standards or rating systems can encourage widespread involvement and ultimately replace traditional industry norms (Expert 9). The experts also suggested companies use their influence to lobby governments and advocate for systemic change (Experts 8 and 10). Expert 12 explained that advocacy is central to achieving this change:

In terms of wider systemic change that needs to happen, I guess just being an advocate: an advocate for the change and for the new kinds of business models and business ecosystems that need to appear. And there are different ways to do that sort of advocacy. There's talking about it, and sort of communicating to others whether it's investors or policymakers or suppliers – a range of different people – just communicating and articulating the change that you think needs to happen and persuading others to come on that journey with you.

This advocacy could also involve educating others about the business case for sustainability: showing other companies that this is no longer about meeting standards or satisfying various regulations, but about doing business in a better way (Expert 9). Ultimately, for a company to engage in SBMI, it has to be playing its part in working toward sustainable systems (Expert 6).

Consumer Behavior

SBMI requires changing companies' value propositions such that they start offering sustainable products and services to their customers (Expert 12); therefore, companies need to be actively encouraging sustainable consumption patterns among consumers. This might include incentivizing consumers to recycle or re-use (Expert 2), transforming consumption so that making a purchase contributes to the creation of sustainable value (Expert 3), or making new types of ownership models readily accessible to consumers (Expert 5). Renting, sharing, and re-commerce all change the way clothing is consumed – Expert 5 highlighted Rent the Runway and Vestiaire Collective as two companies that are making these options more attractive for consumers. SBMI is when a company fundamentally changes the way it offers its products or services (Expert 6), so there should be a visible result of that process:

If I'm a consumer, then I see it in the way that I relate to the people who sell me the clothes. I see that they give me alternative options to simply buying new products, I see that they give me the ability to send stuff back, I see that they give me the ability to sell it online – so if I'm a consumer, I need to see those things coming at me and made available to me. (Expert 6)

The offerings that result from SBMI should have the natural result of shifting consumers' spending habits toward more sustainable patterns (Expert 9). Expert 10 described how the availability of renting platforms, for example, would encourage consumers to think, "Maybe we don't need to own everything that we wear; rather, we can share, you know, share and rent them with others." Companies that provide clothing as a service or encourage take-back at the end of a garment's useful life allow

consumers to participate in the work of reaching their sustainability visions (Expert 12). The same concept applies to secondhand clothing, a market that has been on the rise in the last few years due to an increase in the number of companies offering platforms to facilitate such transactions (Expert 10). These platforms are the tangible results of a company's process of redefining the value it provides to its customers and other stakeholders (Expert 12). Offering new products and services will also require new methods of measuring success; companies can "do qualitative and quantitative work to understand how consumers view the new business models that [the company is] using and...their willingness to engage with them" (Expert 6).

In order to encourage this shift in consumption patterns, companies need to engage with consumers on the topic of sustainability innovation. A starting point for companies would be sharing their sustainability visions: their motivations for being in business. Expert 3 highlighted this type of consumer engagement:

More recently, there are startups that have been fairly bold or up front about why they're doing their startup, and a lot of it has to do with not only certain business innovations but putting...very much up front how they want to use their business models to promote certain values that they have. So Warby Parker [is] front and center in their statement about why they're doing it, [they] talk about how they want to use their business to advance certain social goods.

Expert 4 expanded on this idea with the example of Ten Thousand Villages:

The other thing to think about in business model innovation is people buy not what you do or how you do it, but they buy why you do it. So...going back to Ten Thousand Villages, I think there's a fair amount of innovation there in getting to the why...people will shop there why? Because the impact of someone in the remote hills of Peru sewing you know winter hats, and that feels good and I think that any time you can get to emotion in selling product, I think there's real innovation. We all too often are...buying product without a heart and a soul, and I think that if there's a meaning behind something, that company is...meeting the needs of the consumer...

Companies need to be “communicating to, educating, and empowering [their] consumers” (Expert 2) to consume in a way that supports sustainability. Ultimately a company's sustainability innovation needs to achieve a market fit (Expert 4); to do this, companies have to be thinking about shifting consumer behavior (Expert 9). Sharing the story behind a company's sustainability vision (Expert 3), transparently communicating its sustainability impacts, and highlighting its goals for improving its sustainability performance are all ways for a company to engage with the consumer and encourage adoption of new sustainable product or service offerings (Expert 2).

4.1.8 Open Innovation and Alliances

This concept involves companies working together by engaging in open innovation and forming alliances. These efforts focus on collaborating with industry peers to overcome shared sustainability issues and scaling sustainability innovation to create industry-wide change. To engage in such partnerships, companies have to understand their current impacts and the problems that stand in the way of their

Sustainability Vision (Mindfulness) as well as the external context and how they fit within it (Systems-thinking). The two sub-concepts for this section are Collaboration and Pre-competitive.

Collaboration

Seven experts explained that in order to tackle the sustainability challenges the fashion industry is facing, companies have to be willing to collaborate with one another. The fragmented and globalized nature of fashion supply chains makes it very difficult to implement sustainable initiatives, as companies do not always know where their product is being made (Expert 10). In such an environment, it is extremely challenging – if not impossible – for one company working on its own to make a significant difference. “Brands, retailers, and also manufacturers have seen that it requires innovation to address those big challenges in the fashion supply chain, and that those challenges are...too big for one organization to tackle” (Expert 5). Expert 7 offered a similar comment, saying, “We’re at a point where you’ve really got to work with people who would otherwise be your competitors.” Expert 11 asserted that a lack of interest in partnering with others could hinder innovation efforts: “You may not drive innovation alone and, likely, you’ll need to partner...with multiple stakeholders, organizations, providers, new providers, new suppliers.” As discussed in the Mindfulness concept, companies need to understand their impacts and the gap between their current operations and their sustainability vision. Expert 12 explained how this naturally leads a company into collaboration:

Generally that means you have a deep understanding of those issues and how complex they are. We find that [understanding] typically leads [companies] to realizing that, actually, just typically changing a company or even changing our value chain or business model is probably not enough. We need to collaborate with others, within our sector and probably across sectors. And so to address those issues effectively you need collaboration with external partners...

Expert 12 goes on to say that when a company is trying to create a completely new business model with a new supply chain or value chain, “often it’s a question of, ‘Well, does that value chain exist? Can we find the right suppliers...?’” Without collaborating with other companies, it is unlikely that one company will have the necessary expertise and resources to address all of the sustainability issues it faces.

The experts also described how collaboration could be used to spur innovation forward. Expert 5 claimed that in some cases, there is “innovation happening because these companies are joining forces and looking at how they can collaborate.” In such examples, collaboration has been the source of innovation: it has brought multiple parties together and magnified the ability of each to develop and implement innovative ideas. Collaboration can also be used to avoid potential operational pitfalls associated with pursuing innovation. Expert 6 suggested that working with other companies to solve a problem could decrease the likelihood of a company becoming too distracted to execute its core business functions. Finally, collaboration can be used to compensate for areas where a company lacks operational, financial, or other capability. Small companies, for example, might not have the leverage to create scale;

they might be able to come up with interesting and potentially impactful ideas, but they might not have the resources or the network to bring those ideas to fruition (Expert 7). Collaboration can overcome this obstacle by joining forces with a company that can offer the missing capabilities.

Expert 2 described how one retailer is engaging with multiple partners in order to address its sustainability impacts: one company is helping the retailer keep garments out of landfills, while another is taking textile waste from the retailer's production and upcycling those materials into new yarns. Although the benefits of collaboration are clear, creating such a relationship between companies that might otherwise have been competitors requires new ways of working. Expert 6 warned how this could be an obstacle for many companies in the fashion industry:

[Collaboration] also requires a degree of openness and trust, which a lot of companies don't currently possess. Because I think if you are going to drive systemic change, then you have to forge strong alliances, and that has to be done on the basis of openness, trust, and a degree of generosity and a willingness to see that you will probably only achieve your aims if you're willing to work...openly and transparently with others.

To operate in this way, a company needs to be so dedicated to its sustainability vision that it is willing to form alliances that move it in the direction of this long-term goal, even if those alliances seem counter-intuitive according to traditional short-term profitability business logic (Expert 7).

Pre-Competitive

Building off of the need for openness and trust in collaborative partnerships, companies need to be willing to share information to help scale sustainability innovation. Expert 7 asserted, “I believe really strongly that you can do that in a pre-competitive way...I do think that we run the risk of maybe competing with each other a little bit more than we probably should in the interest of capturing the consumer’s attention.” The Pre-Competitive sub-concept focuses on scaling sustainability innovation for the benefit of the entire industry. While the sharing of pre-competitive information might occur within an explicit collaboration between two companies, this sub-concept calls for making such information publicly available for the benefit of any industry peer. Expert 6 described what this might look like within a company:

It would be ambitious pilot programs, which are seen in the public space...on which they publish the details so they can actually make a contribution to wider systemic change. So I think there’s a willingness to pilot stuff, to talk about it...to show the results and to share their learnings.

The goal of these pilot programs, open innovation labs (Expert 10), or other platforms is clear: scale. By sharing information about innovations related to industry-wide sustainability challenges, companies can move those innovations from niche to mainstream much more quickly. Expert 12 illustrated this concept:

It’s sort of about looking at where there’s already innovation in the system...and looking at what are the barriers to those niche solutions becoming

mainstream? And, therefore, where can we focus our attention on interventions that would take that kind of energy and innovation that already exists, to kind of accelerate that, to become the new mainstream?

Developing radical new processes or products requires working with innovators to bring their ideas from the margins of the industry toward the center, where it will be possible to obtain widespread support and adoption (Expert 6). Expert 5 agreed that pre-competitive information sharing is a very important part of innovation: external parties have to be able to join a company's innovation efforts in order to drive them forward and change industry norms. For example, by sharing the contact of an innovative start-up in the textile recycling business, one company can enable several others to address their textile recycling problems (Expert 2). Furthermore, the additional customers help ensure that the start-up can stay in business and continue offering its innovative solutions to the industry.

Expert 2's company shares pre-competitive information online in hopes that "other brands reference it and use it within their own businesses." The motivation behind such efforts is the company's sustainability vision: as Expert 2 described, "ultimately...we're all working toward the same goal." Despite potential variations among different companies' sustainability visions, all companies within the fashion industry face common barriers in reaching those visions: this is where the experts identified that sharing pre-competitive information can enable the desired change to take place.

4.1.9 SBMI Requirement

The experts identified market acceptance as a key indicator of successful SBMI: “the ultimate test...would be economic” (Expert 6). Expert 9 cautioned that without market acceptance, a company’s sustainability innovation efforts would not be successful. A company has to ensure its sustainability innovation ultimately meets a need in the market, as explained by Expert 4:

To be a sustainable business there would have to be a market fit, meaning you have to find people who will buy your product or service...otherwise without someone willing to pay for your product or service, you don’t really have a business. You may have a non-profit or something else in-between. The reasons why they buy may be multifactorial – could be price, could be environmental, could be social – so all those things factor into creating the business and...it begins and ends with a product-market fit. It will vary by type of product or service, which of those three factors will drive that purchasing behavior, but at the end of the day you have to find a product or service that someone will be willing to pay for and it has to be at a price that can generate at least a return in order to enable a business to financially survive.

When assessing SBMI within a company, Expert 3 explained that one would be looking for “the beginnings of market acceptance, market understanding, buzz and interest that are organic in nature.” As the innovation matures, Expert 3 would also look for income and investment streams. Expert 1 described how SBMI really comes down to “the creation of modified and completely new business models that can help develop integrated and *competitive* solutions” [emphasis added]; the new model has to

be able to compete against traditional offerings. To measure whether market acceptance has been achieved, Expert 6 would apply financial metrics: “does it deliver top line revenue, does it deliver the bottom line profitability, does it deliver the return on investment that is equal to or better than the model that you have now...” and other such metrics of financial health.

Connecting sustainability innovation to productivity and business success can spur additional innovation. Expert 8’s company experienced the benefits of this cycle:

For example, investing in a worker health program: we’ve gone from that, which has productivity benefits, and now we’re actually not just investing...in physical health but in mental health, education, and so on...whereas if we had...not gone through the physical health of the worker wellbeing and its links to productivity, I don’t think we would have had a business case to invest in, you know, stress management for workers. It’s just too remote.

In this case, the business-relevant results of innovation drove further iteration that would not have occurred in the absence of financial benefits. If SBMI detracts from the financial health of a company, then it isn’t truly *sustainable* BMI because it has not satisfied all three pillars of sustainability. As discussed in the Sustainability Vision concept, a company’s sustainability vision has to support all three pillars equally: social and environmental sustainability cannot be pursued at the expense of financial sustainability.

4.2 Summary of Phase I Results

The Phase I results revealed nine concepts and 32 sub-concepts that are necessary for comprehensive measurement of SBMI. Together, these concepts create a comprehensive picture of the elements of a company's business model that must be included in its sustainability innovation efforts if it is to achieve successful SBMI. The results of Phase I are summarized in Table 4.1. From the original list of 13 concepts that would potentially be relevant for measuring SBMI (Table 2.1), nine were identified in the expert interviews. A few concepts were combined: Open Innovation and Alliances, Integration and Synergy, and Ambidexterity and Multi-dimensional Innovation. Three concepts (Organizational Inertia, Coping Mechanisms, and Gravity) were embedded into the final nine concepts. Finally, two concepts were renamed: Primary Filtering Value became Sustainability Vision, and System-level Perspective became Systems-Thinking.

4.3 Phase II Results

The purpose of Phase II was to consolidate the list of concepts necessary for measuring SBMI using information from the expert interviews, develop measures for those concepts, and obtain expert feedback on the quality and utility of the measures. Following the development of measures for each sub-concept identified in Phase I, the researcher sent the list of measures to each of the 12 experts from Phase I. A copy of the list of measures is available in Appendix F. In addition, the researcher sent each expert a link to a Qualtrics survey with four questions asking if the measures were important, relevant for both small and large companies, whether any measures were duplicative or could be eliminated, and one comment section for each of the nine concepts. In the last section of the survey, there were five summary questions asking if

there were any missing ideas, if having top scores for all measures would mean SBMI is occurring, what the five most critical concepts were, and whether the measures would be useful for companies and for investors. A copy of the survey is available in Appendix E. Nine completed surveys were received.

Table 4.1. Final concepts and sub-concepts from Phase I data analysis.

Concept	Sub-concept(s)
Sustainability Vision	Leadership buy-in Easy to explain Three pillars
Integration	Internal communication Embedded responsibility Hiring Training
Transparency	Measuring social/environmental (SE) impact Traceable Publicly available Commitment
Ambidexterity	Separate structure Access to separate resources Investment Boundaries Expectations Ideas
Resiliency	Pivot Learn Challenges Sense of urgency
Mindfulness	Gap analysis Opportunity orientation Critique
Systems-Thinking	Lifecycle Circularity Upstream External context Consumer behavior
Open Innovation & Alliances	Collaboration Pre-competitive
SBMI Requirement	Market fit

The experts were asked to choose which five of the nine concepts were most critical for capturing SBMI; these results are summarized in Table 4.2 All nine experts selected Sustainability Vision and Integration as critical components of SBMI; each expert selected these as two of their five most critical concepts. A majority of the experts also believed Transparency, Systems-thinking, and Resiliency were critical concepts. Four concepts were selected by fewer than half of the experts: Mindfulness, Open Innovation & Alliances, Ambidexterity, and SBMI Requirement.

Table 4.2. Top five most critical concepts for capturing SBMI.

Concept	Frequency (n=9)
Sustainability Vision	9
Integration	9
Transparency	7
Systems-Thinking	6
Resiliency	5
Mindfulness	3
Open Innovation & Alliances	3
Ambidexterity	2
SBMI Requirement	1

Experts were also asked whether companies and investors would find the measures helpful for assessing SBMI: companies for self-assessing their efforts, and investors for assessing a company from the outside. Table 4.3 displays the means for the degree to which the experts agree that the measures would be helpful. Overall, the experts tended to agree that the measures would be helpful for these purposes.

For each of the nine concepts, the experts were asked how important the measures were for capturing SBMI and whether the measures would be applicable for both small and large companies. Table 4.4 summarizes the results for mean importance. Overall, the experts believed all nine concepts were important for

capturing SBMI. Sustainability Vision had the highest mean importance ($M=4.56$, $SD=.527$). None of the experts chose ‘Not at all important’ for any of the concepts, suggesting they all could potentially contribute to SBMI. The Ambidexterity concept stands out as the only concept that was never selected as ‘Extremely important.’ As the concept with the lowest mean importance ($M=3.22$, $SD=.833$), and having only been selected twice as being critical for capturing SBMI, Ambidexterity is a concept where additional discussion will be necessary.

Table 4.3. Mean helpfulness of measures for assessing SBMI from ‘Strongly disagree’ (1) to ‘Strongly agree’ (5).

Concept	Min	Max	Mean (n=9)	Std. Dev.
Companies	4	5	4.33	.500
Investors	3	5	4.22	.667

Table 4.4. Mean importance of measures for capturing SBMI from ‘Not at all important’ (1) to ‘Extremely important’ (5).

Concept	Min	Max	Mean (n=9)	Std. Dev.
Sustainability Vision	4	5	4.56	.527
Systems-thinking	4	5	4.44	.527
Integration	3	5	4.33	.707
Transparency	3	5	4.33	.707
Resiliency	4	5	4.22	.441
SBMI Requirement	3	5	4.22	.667
Mindfulness	4	5	4.11	.333
Open Innovation & Alliances	3	5	4.00	.707
Ambidexterity	2	4	3.22	.833

Table 4.5 summarizes the results for the applicability of the measures in each concept for both small and large companies. Overall, the experts believed the measures would apply to companies regardless of size. The concept with the most discrepancies was Ambidexterity, with four experts expressing that the measures in

this concept would not be applicable to both small and large companies. Three experts selected ‘Large companies only,’ suggesting these measures would only apply to large companies with significant resources, access to information, leverage, and sophisticated policies and systems. ‘Small companies only’ was only selected twice across all nine concepts, suggesting there is very little in the measures that would prevent large companies from being able to use them.

Table 4.5. Applicability of measures to small and large companies.

Concept	Small only (n=9)	Large only (n=9)	Both (n=9)
Integration	0	0	9
Mindfulness	0	1	8
Systems-thinking	0	1	8
Open Innovation & Alliances	0	1	8
SBMI Requirement	0	1	8
Sustainability Vision	1	1	7
Resiliency	0	2	7
Transparency	0	2	7
Ambidexterity	1	3	5

The following sections outline the results for each of the nine concepts separately. The questions being reported in these sections were whether any of the measures were duplicative or could be eliminated.

4.3.1 Sustainability Vision

Table 4.6 summarizes the results for the Sustainability Vision measures. None of the experts thought any of the measures were duplicative, and only one expert selected a measure for elimination (SV3 Three Pillars). In this expert’s comments, they wrote that the measure should not be completely eliminated, but noted that it is important not to get fixated on *three* pillars, instead advocating that companies should

allow for flexibility when defining the pillars on which they focus. Another expert commented that the measures should require supporting documentation or explanation to improve the objectivity of the measures. For example, for SV2 Easy to Explain, “what is easy for one person may not be easy for another.” Therefore, this expert advised having some kind of objective way to demonstrate that a measure was fully satisfied. Finally, one expert suggested including performance evaluations of employees in addition to SV1 Leadership Buy-In. However, performance evaluations are covered in the Integration concept.

Table 4.6. Duplication and elimination of measures: Sustainability Vision.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	9	8
SV3 Three pillars	0	1
SV1 Leadership buy-in	0	0
SV2 Easy to explain	0	0

4.3.2 Integration

The results for the Integration concept are displayed in Table 4.7. The experts overall believed there was little to no duplication in this concept, though there was some discussion related to eliminating certain measures. IS1 Internal Communication and IS2 Embedded Responsibility were each selected once as being duplicative and able to be eliminated. One expert commented that cross-functional collaboration (part of internal communication) was not universally required for SBMI. In terms of responsibility, one expert claimed that not all employees ought to be measured on sustainability because not all functions have the same impact or any impact. However, as noted in the Sustainability Vision concept, another expert specifically called for inclusion of performance evaluations in the measures.

IS3 Hiring was selected twice for elimination. One expert said it was unclear how a hiring manager would assess sustainability innovation, and another said it was most important to determine whether an applicant has a passion for sustainability – the necessary skills and knowledge could be imparted during the training process. Another expert suggested including employee promotion as a measure, again affirming that sustainability innovation should be part of the performance evaluation process. Lastly, one expert advised that in addition to IS5 Measuring SE Impact, the measures need to include economic impact and generation of long-term value.

Table 4.7. Duplication and elimination of measures: Integration.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	8	6
IS1 Internal communication	1	1
IS2 Embedded responsibility	1	1
IS3 Hiring	0	2
IS4 Training	0	0
IS5 Measuring SE Impact	0	0

4.3.3 Transparency

Data for the Transparency concept is captured in Table 4.8. None of the measures were marked as duplicative and only one was marked for elimination. The expert that selected T2 Publicly Available for elimination commented, “Although making it publicly available is laudable and will contribute to accurate and fun capture, there may be an understandable desire to keep developments discreet by commercial players in the early stages.” Multiple experts commented that transparency would be very challenging for small companies, and one expert

commented that the definition of ‘transparency’ is vague and could mean different things to different companies. One expert suggested strengthening the T3 Commitment measure by requiring companies to develop SMART commitments (Specific, Measurable, Achievable, Relevant, Time-bound). A final suggestion was to add a measure related to third-party certification, although this also raises concerns about how feasible it would be for smaller companies with less available resources to pursue such certification.

Table 4.8. Duplication and elimination of measures: Transparency.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	9	8
T2 Publicly available	0	1
T3 Commitment	0	0
T1 Traceable	0	0

4.3.4 Ambidexterity

Table 4.9 summarizes the results for the Ambidexterity concept. Two measures were selected as duplicative and five were selected for elimination (one selection for each measure). Experts commented that AM2 Access to Separate Resources and AM3 Investment were redundant in reference to AM1 Separate Structure and the measures in the Integration concept. One explanation provided for this selection was that each department should already have its own budget; therefore, if sustainability innovation has its own business unit, it will, by definition, have its own resources. AM1 Separate Structure was seen as potentially beneficial but not always necessary; some experts even commented how having a separate structure might make sustainability innovation susceptible to cancellation and lack of investment. One expert asked whether there should be a separate structure and separate resources, saying, “Shouldn’t

[sustainability innovation] just be part of [the company's] DNA and not held out separately?" While such separation was seen as important for protecting sustainability innovation and providing space for it to develop in the Phase I interviews, Phase II feedback suggests that this same idea might be detrimental to full company-wide integration of sustainability innovation.

Five of the six measures for this concept (excluding AM4 Boundaries) were each selected once for elimination. These results are informed by the above explanations provided about the potential pitfalls of having a separate structure for sustainability innovation.

Table 4.9. Duplication and elimination of measures: Ambidexterity.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	7	7
AM2 Access to separate resources	1	1
AM3 Investment	1	1
AM1 Separate structure	0	1
AM5 Expectations	0	1
AM6 Ideas	0	1
AM4 Boundaries	0	0

4.3.5 Resiliency

The results for the Resiliency concept can be found in Table 4.10. Eight experts felt none of the measures were duplicative or needed to be eliminated. R2 Learn, R3 Challenges, and R4 Sense of Urgency each received one vote for duplication and elimination. One expert claimed R2 Learn was duplicative because if the company has pivoted its strategy, it has already learned that its old strategy was not working. Another expert, however, commented that learning is key. R3 Challenges and R4 Sense of Urgency were seen as duplications of the Integration concept – one

expert suggested that these concepts should be components of employee hiring and training. A final comment extends a conversation from the Ambidexterity concept about the separation of social and environmental sustainability and financial sustainability. One expert said the measures imply that sustainability is not seen as an embedded component of financial success and is being treated as separate from the core business.

Table 4.10. Duplication and elimination of measures: Resiliency.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	8	8
R2 Learn	1	1
R3 Challenges	1	1
R4 Sense of urgency	1	1
R1 Pivot	0	0

4.3.6 Mindfulness

Table 4.11 summarizes the results for Mindfulness. Eight experts did not select any measures for duplication or elimination, however all three measures received one selection for both categories. One expert again commented on the implicit separation of sustainability and financial success, saying the job of scanning for sustainability opportunities should not be the responsibility of a separate person. Another expert commented on how these measures capture the role of a CSR team and, therefore, could be eliminated.

4.3.7 Systems-Thinking

The results for Systems-Thinking are captured in Table 4.12. Seven experts believed none of the measures were duplicative; six experts said none should be

eliminated. Two experts questioned whether SYS3 Upstream could instead be treated as a subset of SYS1 Lifecycle, however another expert called for more of a focus on upstream stakeholders. One expert commented that consumer behavior is difficult to capture with a measure because consumers do not buy products solely based on sustainability, but instead rely on a larger set of factors. SYS2 Circularity and SYS5b Consumer Behavior both caused confusion for one expert each, suggesting that the measures contain jargon that not all companies or individuals would understand.

Table 4.11. Duplication and elimination of measures: Mindfulness.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	8	8
M2 Opportunity orientation	1	1
M3 Critique	1	1
M1 Gap analysis	1	1

Table 4.12. Duplication and elimination of measures: Systems-thinking.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	7	6
SYS5 Consumer behavior	1	2
SYS3 Upstream	1	1
SYS1 Lifecycle	1	0
SYS2 Circularity	0	0
SYS4 External context	0	0

4.3.8 Open Innovation & Alliances

The results for Open Innovation & Alliances are summarized in Table 4.13. For duplication, OIA1 Collaboration had two votes and OIA2 Pre-competitive had three votes. However, eight experts said neither of the measures should be eliminated. Multiple experts commented that the measures have significant overlap and could be

combined. One expert said OIA2 Pre-competitive was not important for driving innovation, while another expert commented that collaboration with peer companies was less important than collaboration with other stakeholders. One suggestion was to add a measure about participation in industry associations or initiatives, however this is the intention behind SYS4 External Context.

Table 4.13. Duplication and elimination of measures: Open innovation & alliances.

Measure	Duplication (frequency, n=9)	Elimination (frequency, n=9)
None	6	8
OIA2 Pre-competitive	3	1
OIA1 Collaboration	2	0

4.3.9 SBMI Requirement

For the final concept, SBMI Requirement, none of the experts marked SBMI1 Market Fit for duplication or elimination. The only comment for this concept was a suggestion to use return on investment (ROI) or return on assets (ROA) rather than profitability. The example provided was investing in a machine: this does not create profitability, but it can be captured by ROI or ROA. Therefore, changing the wording of this measure could enable more accurate capture of the economic benefits of sustainability innovation.

4.3.10 Phase II Summary

Experts were asked if there were any ideas missing from the measures that are critical for capturing SBMI. Responses included change management during implementation, economic returns and financial value creation, employee performance metrics related to sustainability innovation, long-term investment, and a stronger emphasis on supplier relationships. Two of these comments relate to measures that had

already been developed: IS2 Embedded Responsibility and a combination of AM3 Investment and AM5 Expectations. Embedded Responsibility specifically asks if employees are evaluated on sustainability innovation milestones; the perception that this is missing from the measures suggests that more specific wording would be beneficial. Similarly, AM3 Investment and AM5 Expectations together capture financial investment and longer-term commitment to sustainability innovation projects. However, it is possible that the concept of long-term investment should be explicitly stated rather than inferred from AM3 and AM5.

One expert called for a stronger emphasis on supplier relationships outside of the Systems-Thinking concept. While collaboration with industry peers is covered in the Open Innovation & Alliances concept, it could be possible to specifically include supplier partnerships in additional concepts like Transparency. This was one aspect that stood out during Phase I data analysis as missing criteria for true SBMI. Less than half of the experts discussed suppliers in their interviews at all – those who did usually mentioned suppliers briefly rather than focusing on them as integral to SBMI. Within the context of social and environmental systems, working closely with suppliers makes sense; however, this is not currently the norm in the fashion industry and the lack of discussion about suppliers suggests a lack of systems-thinking for sustainability.

Finally, experts were asked if top scores for all measures would indicate that SBMI is occurring within a company. Open-ended responses ranged from “Yes, definitely” to “Nope.” One expert commented that the measures do a good job of evaluating how core sustainability is to a company’s culture; another said that if a company had top scores they would likely have the right ingredients for SBMI. Some

experts called for increased objectivity and more of a focus on measurement and economic value creation. Additionally, a few experts felt the measures did not fully capture the potential for scalability of sustainability innovation or whether the changes a company has made are actually transforming its business.

4.4 Summary of Phase II Results

The measures developed during Phase II operationalize the nine concepts from Phase I and translate those concepts into language that is business-relevant. The Phase II results demonstrate that overall, the experts believe the measures are important, useful, and applicable to both small and large companies. The measures serve as guides to point companies to practical options for implementing and developing the components of SBMI. The following chapter includes an in-depth discussion of the results and an explanation of the conclusions that can be drawn from this study.

Chapter 5

DISCUSSION & CONCLUSIONS

5.1 Overview of Results

The purpose of this study was to develop a set of measures that can be used to identify and assess the degree of sustainable business model innovation in fashion apparel companies. The research objectives were to obtain expert input about the concepts that contribute to SBMI, consolidate the list of relevant concepts and develop measures for them, and obtain expert feedback about the quality and utility of the measures. This study was the first attempt in academic literature to measure SBMI. Twelve experts were interviewed about SBMI in Phase I; in Phase II, measures were developed and nine experts provided their feedback. The end result is a list of 32 measures that can be used to assess SBMI within a company.

5.2 Discussion of Phase I Results

Phase I satisfied research objective 1: obtain expert input about the concepts that contribute to SBMI and about how to assess this type of innovation in the fashion industry. Overall, the results from the expert interviews affirm that the concepts related to SBMI in the literature are relevant in measuring SBMI in the fashion industry. Based on the experts' input, the original list of thirteen concepts from the literature was consolidated into nine concepts. A few of the original concepts were combined into one category (i.e. Open Innovation and Alliances, Integration and Synergy) and two concepts were eliminated from the list: organizational inertia and

coping mechanisms. Through analysis of the expert interviews, it became clear that these two concepts related to several concepts and, therefore, would be better captured if they were embedded into the other categories. For example, the negative side effects of organizational inertia can be offset by attributes of Integration, Mindfulness, Resiliency, and other concepts.

The content discussed by the experts supports the findings from the literature as well. For example, Resiliency, or having a culture characterized by anticipatory and repeated innovation (Teixeira & Werther, 2013), has multiple dimensions such as Pivot, Learn, Challenges, and Sense of Urgency. Undergirding each of these dimensions is the recognition that the external environment is changing and companies need to be positioned in such a way that they will be ready to adapt and anticipate the need to innovate. The experts also affirmed the relevance of the concept of Ambidexterity and the need to allow cross-fertilization but prevent cross-contamination between core processes and innovation projects (O'Reilly & Tushman, 2004). Experts discussed the fine line between supporting an innovation and giving it space to develop away from traditional expectations and metrics of success, but preventing innovation from becoming a drain on resources or be dragged down by 'business as usual' thinking. Similar relationships with the literature exist for the remaining seven concepts.

The innovation literature suggested that while measurement is important for capturing innovation, using financial metrics alone could cause companies to miss important information (e.g. Dewangan & Godse, 2014; Figge et al., 2002; Hansen & Schaltegger, 2016; Kristiansen & Ritala, 2018; Zizlavsky, 2016). According to the experts, this pitfall can be extended to sustainability innovation measurement because

companies have to add in measures for social and environmental impact in order to obtain a complete picture of their efforts. The experts agreed that measurement is paramount, however, they also cautioned that current financial metrics and accounting systems miss information that is critical for SBMI. In sum, the experts' input supports França and colleagues' (2017) findings that the shift toward sustainability requires a shift in the company's mindset, management routines, incentives and competence development, as well as stronger connections between units and better communication. Therefore, the measures a company uses to gauge its effectiveness need to encompass each of these areas. The measures developed in Phase II accomplish this task, as these components are part of the Sustainability Vision, Integration, and Mindfulness concepts.

The experts' discussion of what is required for pursuing SBMI stands in stark contrast to the fashion industry's early sustainability efforts of codes of conduct and factory monitoring (Dickson, 2013; Dickson et al., 2009). In fact, the characteristics of SBMI point to the exact pitfalls of these early attempts. Codes of conduct and factory audits were criticized for their lack of appropriate management systems and stakeholder collaboration, and their success was further stunted by the fragmented and opaque nature of fashion supply chains (e.g. Awaysheh & Klassen, 2010; Dickson, 2013; Dickson et al., 2009; Frenkel & Scott, 2002; Lim & Phillips, 2008; Park & Dickson, 2008). These efforts could have been more successful had they been supported with a sustainability vision, internal communication and cross-functional collaboration, fully traced supply chains, employee training about the impacts of their work on upstream stakeholders, and collaboration with external stakeholders. These are a few of the areas the experts highlighted as being critical for successful SBMI:

Sustainability Vision, Integration, Transparency, Mindfulness, and Systems-Thinking. Had companies been able to self-assess their efforts using the measures developed in Phase II, it is possible that they would have identified some of these shortcomings up front and been able to develop more effective strategies.

The literature suggested several traits of the fashion industry that could make sustainability innovation difficult, including a lack of transparency, growing consumption, downward pressure on suppliers, and fragmentation of both supply chains and sustainability efforts (e.g. Gereffi & Frederick, 2010; Hurley & Miller, 2006; Park & Dickson, 2008; Şen, 2008). Some of the experts touched on these traits (and others, such as the hypercompetitive nature of the industry and the current survival mentality of fashion companies); however, by and large the experts did not focus on specific elements of the fashion industry that would impact the process of SBMI. Instead, their input aligned with the academic literature, which rarely – if ever – focused solely on the fashion industry (e.g. Bocken et al., 2014; Clauss, 2017; Laukkanen & Patala, 2014; Morioka et al., 2016). This suggests that the characteristics of SBMI are not necessarily specific to one industry; instead, perhaps they could be applicable outside of fashion.

The requests for clarification about the definition of SBMI and about sustainability in general build on an ongoing conversation in the literature about merging the science of sustainability and sustainable development with the language and logic of the business world. Previous research has attempted to bridge this gap through publications such as the Framework for Strategic Sustainable Development, and the Future Fit Business Benchmark (e.g. França et al., 2017; Kurucz et al., 2017; Robèrt et al., 2013; Rockström et al., 2009). However, as illustrated by the expert

interviews, confusion still exists in this area. SBMI is currently in the early stages of development in academic literature; therefore, it is extremely valuable to study the perspective of industry professionals because these are the ultimate users of SBMI research. These individuals will be the ones putting the results of SBMI research into practice; therefore, capturing their understanding of the topic (or lack thereof) provides necessary information about areas that need further research if we are to finally bridge the gap between sustainability and business. The expert input gained from this study makes an important contribution to the literature in this area.

5.3 Discussion of Phase II Results

Phase II satisfied research objectives 2 and 3: to consolidate the list of relevant concepts and develop measures for them, and to obtain expert feedback about the quality and utility of the measures. Despite significant alignment between the Phase I interviews and the literature, the survey results in Phase II showed some inconsistencies. It seems that the disconnect lies in the translation of general concepts into operational measures. For example, the Integration concept captured input from experts about the need for cross-functional internal communication and for sustainability innovation to be embedded into the responsibilities of all teams throughout the company. However, during the survey experts asserted that cross-functional collaboration was not necessary in all cases and that some teams might not have a role to play in sustainability innovation. These comments suggest a mindset that sustainability innovation happens in certain areas of the business and therefore can only be carried out by certain teams. This stands in stark contrast to the definition of SBMI, which requires complete transformation of how a company creates, offers,

and delivers value to the customer (Bocken et al., 2015; Lüdeke-Freund, 2010; Rahbek et al., 2018). Such a definition suggests that all teams would have a role to play.

Another example of an inconsistency comes from SYS5 Consumer Behavior. Nine experts discussed the need to engage consumers and change their behavior during the Phase I interviews, and yet the survey results show hesitancy around this concept as a measure of SBMI. This example illustrates the primacy of measurement: even when a concept was described as important in the interviews, it was seen as less valuable during the survey if it was difficult to capture through measurement. This fact – whether something can be measured or not – is the lynchpin in determining what a company will focus on and what it will deem important.

These two examples illustrate how even when a concept can seem good or necessary in a general sense, it has to have a way to be operationalized if it is to carry any value in a business sense. This is what the present study attempted to do through Phase I and Phase II: the iterative process of the researcher grading the measures with her advisor and resolving discrepancies enhanced the reliability of the measures, while the expert feedback from the questionnaire contributed to the measures' validity (Churchill Jr. 1979; Hallgren, 2012). The results for the mean importance of the measures demonstrate significant agreement among the experts that the measures do indeed capture SBMI. Even though a couple of the experts expressed confusion or different opinions about the measures in the above examples (Integration and Systems-Thinking), most of the experts agreed that the measures are important and did not select any for duplication or elimination.

The experts' comments lead to a key question: do sustainability innovation measures (or sustainability measures that companies use in general) fully and

accurately capture the overarching concepts they intend to measure? For example, does measuring cross-functional collaboration between departments fully capture whether employees across the company are able to work toward sustainability innovation together? Do businesses interpret this question as such, or do they think this measure captures something different? What impacts would this type of collaboration have on traditional business metrics, and, from a company's point of view, would those impacts overshadow the potential sustainability benefits? This is an inherent challenge in creating a measurement tool that is comprehensive but not cumbersome to use. It is possible that additional measures could more accurately capture the overall concept, but increasing the number of measures would also make it more difficult to complete the assessment and less likely that companies would choose to partake.

The concept with the most variable responses was Ambidexterity. In the Phase I interviews, several experts talked about how companies need to be capable of pursuing innovation alongside their day-to-day operations. The need for innovation to be protected and incubated separately from legacy businesses was made clear, and many experts specifically mentioned having a separate subsidiary, business unit, or other team for innovation. In the Phase II survey, however, Ambidexterity had the lowest mean importance for assessing SBMI (though it was still seen as being at least somewhat important) and was only selected by two experts as a top five most critical concept.

The fact that compared to all eight other concepts, more experts believed Ambidexterity would only apply to large companies is quite telling. It is possible that the AM1 Separate Structure was too prescriptive about how a company ought to

pursue ambidexterity. In order to apply to small and large companies alike, it was necessary to develop the measures in a way that would allow companies to satisfy them in different ways. For example, the other measures in the Ambidexterity concept ask about investment in and risk tolerance for sustainability innovation, but they don't define what those levels of investment and risk should be – this depends on the company. Small companies might not have the resources to dedicate an entire business unit to sustainability innovation, but they might have other ways of ensuring that this type of innovation has space to develop alongside day-to-day operations. This example highlights the balance these measures must strike: they must be specific about *what* a company needs to do or focus on, but flexible in *how* a company goes about accomplishing those tasks.

Regarding AM1 Separate Structure, it is important to note conflicting comments expressed in the Integration concept: that collaboration with all departments is not necessary and that not all job functions contribute to sustainability. If this were true, it would make sense for sustainability innovation to be the responsibility of one specific team or business unit – for it to have a separate structure from the core business. The majority of the experts, however, support the ideas that cross-functional collaboration and embedded responsibility for sustainability innovation in all job functions is more conducive to successful SBMI. While the pitfalls of this type of structure do need to be accounted for, the remaining measures in the Ambidexterity concept provide assistance in this area. For example, AM2 Access to Separate Resources and AM3 Investment ensure the sustainability team is properly resourced, while AM4 Boundaries ensures sustainability innovation doesn't become a drain on the core business.

The results from the Ambidexterity concept and AM1 Separate Structure relate to comments from one expert that the measures imply sustainability is not embedded into financial success. These comments highlighted an assumption the researcher held during measure development that the companies using the measurement tool would have already figured out financial success. What this means is the measures were designed more for incumbent companies than born-sustainable startups: these companies are already financially viable, but they are trying to determine how to incorporate social and environmental sustainability into their business models.

Despite this implicit separation, the measures still improve upon current tools like Elkington's Triple Bottom Line (TBL). The TBL is an add-on to current accounting systems to encourage choices that create social and environmental value, however it touches only one element of a company's business without encouraging integration of sustainability in other components of the business model. The format encourages a trade-off mentality between each of the three pillars instead of a joint pursuit of all three, which is part of the reason Elkington himself proposed a recall of the term in 2018 (Elkington, 2018). The measures developed during Phase II of the present study, while also assuming that a company has already figured out financial success, take a more holistic view of a company and capture the degree to which sustainability is embedded in its business model.

Another trend from the survey results is the belief that companies are closed entities that do not need to work together toward sustainability. The need for a systems approach toward sustainability is clearly evident from a science perspective, as individual parts of earth's systems are valued specifically for their contribution to the whole (e.g. Lovins, 1999; Robèrt, 2000; Robèrt et al., 2013; Rockström et al., 2009).

While this is equally true for businesses – according to Wells, “A sustainable product cannot be produced by an unsustainable industry” (2013, p. 229) – the role of businesses as each other’s competitors is a prevailing belief. Despite discussions about the importance of working with other companies and developing pre-competitive, industry-wide solutions, some experts commented that alliances with other companies and even internal collaboration weren’t truly necessary for SBMI. There seems to be an underlying belief among some of the experts that a company can pursue sustainability by itself and in its own way; developing the capacity to think more broadly and clearly identify a company’s place in the larger systems to which it belongs is therefore of critical importance. Companies have to be able to understand the role they play in larger societal and environmental systems in order to develop their sustainability visions and kick-start the process of SBMI. Without this understanding, and without engaging the systems in which they take part, companies will not be able to successfully accomplish SBMI.

Finally, confusion about the term ‘sustainability’ continued throughout the Phase II results. The comment that a company should not be tied to three pillars but should have flexibility to pursue what makes sense to them typifies the prevailing approach to sustainability in the fashion industry. Currently, sustainability is a vague term that means different things to different people. Companies can determine what ‘sustainable’ means for themselves and then describe themselves as ‘sustainable’ by satisfying their own definition. This disjointed approach makes it very difficult to achieve system-wide change because companies are using different standards. If there are not three pillars, and if *three* is not a rigid requirement, then companies are by definition not equally pursuing social, environmental, and financial sustainability.

Without reaching agreement on and widespread understanding of this fact, sustainability efforts will continue to be fragmented and largely ineffective.

5.4 Conclusions

There are three main conclusions from this study. The first conclusion is that nine concepts have been identified as important for measuring SBMI. In contrast to the fragmented nature of past SBMI research, this study investigated potential components of SBMI and identified those that are relevant for measurement, resulting in a holistic understanding of SBMI. This is an important step in defining SBMI as one cohesive concept in academic literature. Together, the nine concepts provide a solid foundation on which to conduct future research and further refine the bridge between the theory and practice of SBMI.

A second conclusion is that the nine concepts have successfully been translated into business-relevant operational measures. The expert feedback in Phase II revealed that overall, the measures are important, useful, and critical for capturing SBMI. The measures touch on all three areas of companies' business models, or how they create, offer, and deliver value. By translating sustainability innovation concepts into a form that relates directly to each of these three business model components, the measures have significant value in their ability to serve as a practical guide for companies looking to pursue SBMI.

In order to develop business-relevant operational measures, it was necessary to investigate the practitioner's perspective on SBMI. If SBMI research is to have any practical benefit in real-world scenarios, there has to be a bridge between abstract concepts and their implementation; this means obtaining the perspective of those individuals who will carry out the processes of SBMI is critical. This study

specifically obtained expert feedback and input about the concepts that relate to SBMI and how to capture those concepts through measurement. This data aids the process of building a bridge between scientific sustainability and the implementation of sustainable business models – an ongoing conversation in academic literature. According to the Phase II results, a foundation for this bridge in SBMI research has been successfully built.

A third and final conclusion is that the fashion industry's collective understanding of sustainability needs to improve in order for true SBMI to be possible for any individual company. The experts expressed confusion during both phases of the study about the definitions of 'sustainability' and 'sustainable business model innovation.' Being that these were experts in the field and had professional experience related to sustainable business, this suggests widespread misunderstanding of these terms exists throughout the rest of the fashion industry.

Until everyone in the industry is on the same page about the definition of sustainability – specifically of the need to uphold all three pillars of people, planet, and profit – industry-wide change will be impossible. If one company believes it can refer to itself as 'sustainable' for its environmental efforts alone, while another company ignores environmental sustainability but does work toward social sustainability, the industry as a whole will not be moving in the same direction. Without consensus, companies will continue to pursue their unique definitions of sustainability and potentially uphold one or two pillars instead of all three. This fragmented approach and inconsistent use of the term 'sustainability' will be detrimental for the entire industry.

5.5 Limitations & Future Research

As with all academic research, this study has certain limitations that must be highlighted. First is the small sample size. While the sample size did allow for the gathering of rich qualitative data, future research could build upon the information gleaned in this study with quantitative data from a larger sample. With only twelve participants in Phase I and nine participants in Phase II, additional research will be necessary to ensure a fully comprehensive picture of SBMI is obtained. The fact that three experts' perspectives were missing from the survey data also means it is possible that certain perspectives were not fully expressed in Phase II. The experts were chosen specifically for the experience and perspectives they would bring to the topic; therefore, missing the input of even one expert detracts from the conversation as a whole. Future research could utilize a wider selection of experts, though sourcing a broader sample within the confines of the sampling criteria will continue to be a challenge. Easing the sample criteria and seeking out participants from industry associations could aid in the recruitment process. A survey questionnaire would be beneficial for this type of study, and the study could mirror Phase II to gain more feedback about the measures. This would be helpful for refining the measures and ensuring that the relevant concepts for measuring SBMI are adequately captured.

A second limitation is that the measures have not been tested on actual companies: this is a clear next step for future research. SBMI is in the early stages of research, and as such, case studies will provide the “most suitable approach for investigation” (Yang et al., 2017, p. 1797). Case studies will provide rich data for this subject area (as did the present study), but would combine this richness with testing of the measures on particular cases. Future researchers could conduct case studies on a group of similar companies (e.g. all large, all small, incumbents, startups etc.) or select

companies with different attributes to see how measure implementation varies depending on the type of the company.

Further refinement of the measures depends on how they function in practice and whether they fully and accurately capture the concepts they intend to measure. Researchers could recruit companies to measure themselves as a self-assessment, then interview key individuals within the company about the assessment. This type of study would provide necessary information about what it is like for a company to use the measures, whether they feel any of their efforts fall outside the scope of the measures, and whether taking the self-assessment alerted them to areas where they have not been directing any of their attention. Future studies could also test whether the measures are truly specific to the fashion industry or could be applicable elsewhere, as the potential application to other industries was a key takeaway from the Phase I results. As with the above example, researchers could recruit companies from within the fashion industry and from other industries and obtain their feedback on the measures. SBMI research overall will benefit from empirical testing since it is such a new topic in academic literature.

A final limitation was the researcher's assumption during measure development that the companies pursuing SBMI have already figured out financial sustainability. Future research could investigate whether the measures would apply to born-sustainable startups that are trying to improve and iterate upon their existing strategies, or if the measures are better suited for incumbent companies. Researchers could recruit companies that started in the last decade and compare them with companies that have been operating for at least 30 years. Combining a company self-assessment with interviews would work for this type of study as well, as it would

examine the functionality of the measures in practice and obtain these two opposite perspectives (born-sustainable startup vs. incumbent) on SBMI. It is also important to consider whether, for the future sustainability of the fashion industry, it is important that the measures apply to startups – is it possible that it is more worthwhile to focus exclusively on incumbent companies? Should there be different measurement tools for small versus large companies, or even for different categories of the fashion industry? These are questions worth asking in future studies.

5.6 Implications

In the near term, companies can begin using the results of this study to identify blind spots in their sustainability strategies. Even before further refinement of the measures takes place, companies can use the measures and the information gleaned from the Phase I results to begin exploring how to strengthen their sustainability efforts. The fashion industry's past sustainability efforts (i.e. codes of conduct, factory monitoring, CSR) were ineffective because they lacked consistency, integration with companies' core business models, and adequate management oversight. The results from this study suggest that successful SBMI requires each of these components (in addition to others); the measures offer companies specific guidelines for where to focus their efforts to develop more effective strategies. Using the nine concepts and 32 dimensions as guides, companies can begin to transform their business models into ones that align with the science of sustainability and begin contributing social and environmental value alongside financial value.

If a company is missing any of these elements, according to the experts' input, it is highly unlikely that a company will achieve its goals. The measures intentionally allow for flexibility in how a company goes about satisfying each requirement. As a

self-assessment, companies benefit from responding as accurately as possible to the questions: boosting their scores using biased or faulty information only hurts their own chances for success. These elements of the measures allow the measures to apply as broadly as possible to companies with different characteristics while still pointing companies in the right direction for successful SBMI.

At an industry level, this study highlights the pressing need for increased collaboration and joint problem-solving. A couple experts' comments revealed a prevailing mindset that a company should pursue sustainability on its own without help from others. In recent years however, this mindset has begun to shift. Several multi-stakeholder initiatives, such as the Sustainable Apparel Coalition, and company partnerships have been created for the purpose of achieving sustainability results. There is a growing realization that "a company committed to sustainability but working unilaterally can accomplish only so much" (Chouinard, Ellison, and Ridgeway, 2011, p. 61). The science perspective on sustainability makes it clear that we do not have all the answers and need to seek advice and input from other sources to arrive at solutions (e.g. França et al., 2017; Rockström et al., 2009; World Commission, 1987); the business perspective on sustainability needs to catch up in order to make effective progress.

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If you want to number your bibliographic entries, change the style of the items to *Bib
Entry - numbered*.

Appendix A
HUMAN SUBJECTS PROTOCOL
University of Delaware

Protocol Title: **Measuring Sustainable Business Model Innovation in the Fashion Industry**

Principal Investigator

Name: **Kelly Allen**
Department/Center: **Fashion and Apparel Studies**
Contact Phone Number: **(303) 587-6843**
Email Address: **keallen@udel.edu**

Advisor (if student PI):

Name: **Dr. Marsha Dickson**
Contact Phone Number: **(302) 690-5060**
Email Address: **Dickson@udel.edu**

Other Investigators:

Investigator Assurance:

By submitting this protocol, I acknowledge that this project will be conducted in strict accordance with the procedures described. I will not make any modifications to this protocol without prior approval by the IRB. Should any unanticipated problems involving risk to subjects occur during this project, including breaches of guaranteed confidentiality or departures from any procedures specified in approved study documents, I will report such events to the Chair, Institutional Review Board immediately.

1. Is this project externally funded? ☐ YES ☒ NO

If so, please list the funding source: **N/A**

2. Research Site(s)

☒ **University of Delaware**

☐ Other (please list external study sites)

Is UD the study lead? **X** YES ☐ NO

3. Project Staff

Please list all personnel, including students, who will be working with human subjects on this protocol (insert additional rows as needed):

NAME	ROLE	HS TRAINING COMPLETE?
Kelly Allen	PI/Interviewer/Data Analyst	Yes
Marsha Dickson	Advisor/Data Analyst	Yes

4. Special Populations

Does this project involve any of the following:

Research on Children? **No**

Research with Prisoners? **No**

Research with Pregnant Women? **No**

Research with any other vulnerable population (e.g. cognitively impaired, economically disadvantaged, etc.)? **No**

5. RESEARCH ABSTRACT Please provide a brief description in LAY language (understandable to an 8th grade student) of the aims of this project.

The purpose of this study is to develop a scale to measure sustainable business model innovation (the process of changing a company's business model to operate in a way that is better for society and the environment) in the fashion industry. In the first phase of the study, the PI will interview experts in the fashion and finance industries to obtain insight into the phenomenon of sustainable business model innovation, discuss real-world examples, and learn about the concepts that contribute to sustainable business model innovation. In the second phase, the PI will develop measures for these concepts and solicit expert feedback through the use of a survey.

The objectives for this study are as follows:

1. Obtain expert input about the concepts that contribute to sustainable business model innovation and about how to assess innovation in the fashion industry (interviews)
2. Consolidate relevant concepts and develop measures for each of them
3. Obtain expert feedback on the quality and utility of the measures (surveys)
4. Refine the measures

6. PROCEDURES Describe all procedures involving human subjects for this protocol. Include copies of all surveys and research measures.

This study will take place in two phases. Phase I consists of interviews with experts to obtain broad insights about sustainable business model innovation and the relevant concepts for measuring it. Subjects will be asked to discuss how they define sustainable business model innovation, any examples they have seen in their industry experience, and what concepts they believe are necessary for measuring and assessing sustainable business model innovation in the fashion industry. Using the information gleaned from these interviews, the PI will consolidate the list of concepts for use in Phase II.

During Phase II, the PI will develop measures for each of the chosen concepts. This will be an iterative procedure involving multiple rounds of revision to develop a quality measurement scale. Following measure refinement, the PI will send a link to an online survey to the interview subjects from Phase I and ask for their feedback about the measures. This survey will include 5 questions to assess the importance, utility, and representativeness of the measures. The subjects will be notified upon initial contact that the study involves two phases and will be asked to consent to participation in both phases. Subjects who decline to participate in both phases will not be asked to participate.

7. STUDY POPULATION AND RECRUITMENT

Describe who and how many subjects will be invited to participate. Include age, gender and other pertinent information.

Using a purposive sampling technique, the PI and her advisor will compile a list of potential subjects based on criteria regarding their professional experience. Subjects will have at least ten years of professional experience related to fashion, sustainability, or finance who are in positions that afford them a holistic perspective within their chosen field. These individuals are desired because of their level of expertise, the breadth of their experience, their systems-level perspective, and the depth of their knowledge about 'business as usual' in their chosen industries. It is critical to have a mix of professionals from inside and outside of the fashion industry, as well as from different roles within the fashion industry, in order to leverage the knowledge in both spheres.

The potential subjects will primarily be sourced from the PI and her advisor's professional networks in the fashion industry. In addition, the PI will ask for recommendations from her thesis committee members (also University of Delaware faculty). A maximum of 18 interviews will be conducted.

Attach all recruitment fliers, letters, or other recruitment materials to be used. If verbal recruitment will be used, please attach a script.

Script for email recruitment:

Dear X,

My name is Kelly Allen, and I am a graduate student in the Fashion and Apparel Studies program at the University of Delaware. I am conducting a research study titled "Measuring sustainable business model innovation in the fashion industry," a project supervised by Dr. Marsha Dickson. The purpose of this study is to develop a set of measures to identify and assess the degree of sustainable business model innovation in the fashion industry.

Your professional experience leads me to believe that your participation in the study would provide valuable insight into the topic of sustainable business model innovation. I am writing to ask if you would be willing to participate in the study, which will take place in two parts. First, I would like to conduct a one-on-one interview with you via GoToMeeting. The interview will take approximately 30 minutes. Second, I would like to follow up with you (one to two months after the interview) and obtain your feedback on the measures I develop for sustainable business model innovation. This second phase will be in the form of a brief survey, and should take no more than 15 minutes to complete.

Throughout the study, your identity will be kept confidential. Your name, job title, and company name will never be disclosed – for any direct quotes, you will be identified by the pseudonym “Expert [number].” Data collected throughout the study (from the interview and the survey) will only be used for research purposes. Your participation in this study is entirely voluntary.

Please let me know if you are willing to participate. I look forward to hearing from you!

Describe what exclusionary criteria, if any will be applied.

Individuals who do not have professional experience related to fashion, sustainability, or finance will not be included in the study.

Describe what (if any) conditions will result in PI termination of subject participation.

The PI does not foresee any reasons for termination of subject participation.

8. RISKS AND BENEFITS

List all potential physical, psychological, social, financial or legal risks to subjects (risks listed here should be included on the consent form).

No risks are anticipated.

In your opinion, are risks listed above minimal* or more than minimal? If more than minimal, please justify why risks are reasonable in relation to anticipated direct or future benefits.

*(*Minimal risk means the probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests)*

N/A

What steps will be taken to minimize risks?

N/A

Describe any potential direct benefits to participants.

There are no foreseeable direct benefits to study participants.

Describe any potential future benefits to this class of participants, others, or society.

The data gathered from this study will help to inform practitioners and academics about the concepts that contribute to sustainable business model innovation in the fashion industry. The outcomes of this research will potentially aid incumbent apparel companies who are trying to transform their business model into one that is compatible with and supportive of social and environmental sustainability. For emerging companies, the measurement scale should help them anticipate problems and address potential pain points that inhibit sustainable transformation from taking place. For investors, the measures could help them identify when a company is doing something truly groundbreaking and predict which initiatives and business models will be successful. For academics, this research fills a gap in the literature by defining the characteristics of sustainable business model innovation and developing a scale with which to assess it.

If there is a Data Monitoring Committee (DMC) in place for this project, please describe when and how often it meets.

N/A

9. COMPENSATION

Will participants be compensated for participation?

No

If so, please include details.

10. DATA

Will subjects be anonymous to the researcher?

No

If subjects are identifiable, will their identities be kept confidential? (If yes, please specify how)

Participant names, job titles, and the names of companies for which they work will not be recorded. If any names or titles do come up during the interview, these will be edited out of the transcript. For direct quotes, participants will be referred to using the pseudonym "Expert [number]."

How will data be stored and kept secure (specify data storage plans for both paper and electronic files. For guidance see

<http://www.udel.edu/research/preparing/datastorage.html>)

The interviews will be electronically digitally recorded and transcribed using GoToMeeting. All electronic files, including the interview recordings and the completed surveys, will be kept in protected files belonging to the PI's advisor on a secure University of Delaware network. The interview transcripts will be stored in a locked file cabinet in the advisor's office.

How long will data be stored?

Approximately three years.

Will data be destroyed? ☒ **YES** ☐ **NO** (if yes, please specify how the data will be destroyed)

Interview transcripts will be shredded and interview recordings and completed surveys will be deleted and data will be scrubbed.

Will the data be shared with anyone outside of the research team? ☐ YES ☒ NO

How will data be analyzed and reported?

Following the interviews in Phase I, the transcription of each interview will be double-checked against the digital recording. Once this process is complete, the transcription will be uploaded into Nvivo software to conduct a content analysis. The PI will analyze concepts within each subject's interview and across the entire sample. These concepts will be used to determine which concepts are necessary to include in the measurement scale. During Phase II, the survey data will be analyzed using descriptive statistical analyses in Qualtrics.

11. CONFIDENTIALITY

Will participants be audiotaped, photographed or videotaped during this study?

All participants will be audiotaped during Phase I to ensure both the clarity and accuracy of data transcription and analysis. Phase II does not involve audiotaping, photographing, or videotaping participants.

How will subject identity be protected?

Participant names, job titles, and company names will not be recorded. Participants will be referred to using the pseudonym "Expert [number]."

Is there a Certificate of Confidentiality in place for this project? (If so, please provide a copy).

No

12. CONFLICT OF INTEREST

(For information on disclosure reporting see:
<http://www.udel.edu/research/preparing/conflict.html>)

Do you have a current conflict of interest disclosure form on file through UD Web forms?

PI: No

PI's advisor: Yes

Does this project involve a potential conflict of interest*? No

* As defined in the University of Delaware's Policies and Procedures ,a potential conflict of interest (COI) occurs when there is a divergence between an individual's private interests and his or her professional obligations, such that an independent observer might reasonably question whether the individual's professional judgment, commitment, actions, or decisions could be influenced by considerations of personal gain, financial or otherwise.

If yes, please describe the nature of the interest: N/A

13. CONSENT and ASSENT

☐ Consent forms will be used and are attached for review (see Consent Template under Forms and Templates in IRBNet)

☐ Additionally, child assent forms will be used and are attached.

☒ Waiver of Documentation of Consent

☐ Waiver of Consent (Justify request for waiver)

14. Other IRB Approval

Has this protocol been submitted to any other IRBs?

No

15. Supporting Documentation

Please list all additional documents uploaded to IRBNet in support of this application.

Informed consent script

Appendix B

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Title of Project: Measuring Sustainable Business Model Innovation in the Fashion Industry

Principal Investigator(s): Kelly Allen, Dr. Marsha Dickson (academic advisor)

You are being invited to participate in a research study. This consent form tells you about the study including its purpose, what you will be asked to do if you decide to take part, and the risks and benefits of being in the study. Please read the information below and ask us any questions you may have before you decide whether or not you agree to participate.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to develop a set of measures that can be used to assess the degree of sustainable business model innovation within the fashion industry. This research is part of the Principal Investigator's master's thesis in the Fashion and Apparel Studies program at the University of Delaware.

You will be one of approximately 18 participants in this study. You are being asked to participate because of your professional experience related to fashion, finance, and/or sustainability. Based on your experience, the researchers believe you would provide valuable insight into the topic of study: sustainable business model innovation. In addition, you are willing to take part in both phases of this study, as described below.

WHAT WILL YOU BE ASKED TO DO?

As part of this study you will be asked to participate in two phases. The first phase involves one interview, lasting approximately 30 minutes. These interviews will take place using GoToMeeting (at no cost to the participants), and will be digitally recorded and transcribed verbatim. The second phase involves a survey with a combination of closed and open-ended questions. The survey should take about 15 minutes to complete. Participation in this study does not require you to travel to meet with the Principal Investigator.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

The research team does not expect your participation in this study will expose you to any risks different from those you would encounter in daily life.

WHAT ARE THE POTENTIAL BENEFITS?

You will not benefit directly from taking part in this research. However, the knowledge gained from this study may contribute to our understanding of what sustainable business model innovation looks like in the fashion industry and how it can be appropriately characterized and assessed.

HOW WILL CONFIDENTIALITY BE MAINTAINED? WHO MAY KNOW THAT YOU PARTICIPATED IN THIS RESEARCH?

All personal information will be kept confidential. No signatures, initials, job titles, or company names will be recorded during the interview, nor will any personal information be collected during the survey. The digital recordings of the interview and the digital copies of the survey will be kept as a password-protected file and transcribed copies of the interview will be kept in a secure locked cabinet on the University of Delaware campus to maintain confidentiality. In the transcript and throughout the study, each participant will be identified as “Expert number” instead of by his or her name. The list linking pseudonyms and participants’ identities will also be kept in a password-protected file. All records will be kept for a minimum of three years.

The research team will make every effort to keep all research records that identify you confidential. The findings of this research may be presented or published. If this happens, no information that gives your name or other details will be shared. The confidentiality of your records will be protected to the extent permitted by law. Your research records may be viewed by the University of Delaware Institutional Review Board, which is a committee formally designated to approve, monitor, and review biomedical and behavioral research involving humans. Records relating to this research will be kept for at least three years after the research study has been completed.

WILL THERE BE ANY COSTS TO YOU FOR PARTICIPATING IN THIS RESEARCH?

There are no costs associated with participating in this study.

WILL YOU RECEIVE ANY COMPENSATION FOR PARTICIPATION?

There is no compensation associated with participating in this study.

DO YOU HAVE TO TAKE PART IN THIS STUDY?

Taking part in this research study is entirely voluntary. You do not have to participate in this research. If you choose to take part, you have the right to stop at any time. If you decide not to participate or if you decide to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which you are otherwise entitled. Your decision to stop participation, or not to participate, will not influence current or future relationships with the University of Delaware.

This study involves two phases. If at any time you decide you no longer want to participate in both phases, please inform the research team by telling the Principal Investigator about your decision. There are no consequences for deciding to withdraw before completing Phase II.

WHO SHOULD YOU CALL IF YOU HAVE QUESTIONS OR CONCERNS?

If you have any questions about this study, please contact the Principal Investigator, Kelly Allen, at (303) 587-6843 or keallen@udel.edu. Alternatively, you may contact the investigator's academic advisor, Dr. Marsha Dickson, at (302) 690-5060 or dickson@udel.edu.

If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at hsrb-research@udel.edu or (302) 831-2137.

Appendix C

IRB APPROVAL



Kelly Allen <keallen@udel.edu>

IRBNet Board Action

Nicole Farnese-McFarlane <no-reply@irbnet.org>

Thu, Nov 8, 2018 at 11:45 AM

Reply-To: Nicole Farnese-McFarlane <nicolefm@udel.edu>

To: Marsha Dickson <dickson@udel.edu>, Kelly Allen <keallen@udel.edu>

Please note that University of Delaware IRB (HUMANS) has taken the following action on IRBNet:

Project Title: [1335804-1] Measuring Sustainable Business Model Innovation in the Fashion Industry
Principal Investigator: Kelly Allen

Submission Type: New Project
Date Submitted: October 25, 2018

Action: EXEMPT
Effective Date: November 8, 2018
Review Type: Exempt Review

Should you have any questions you may contact Nicole Farnese-McFarlane at nicolefm@udel.edu.

Thank you,
The IRBNet Support Team

www.irbnet.org

Appendix D

INTERVIEW QUESTIONS

1. How do you define sustainable business model innovation?
2. What examples of sustainable business model innovation have you seen in the fashion industry?
3. What are the characteristics of sustainable business model innovation within a fashion company?
 - a. How do you know if sustainable business model innovation is occurring?
 - b. How do you distinguish sustainable business model innovation from product, process, or technological innovation?
4. What are the most important capabilities a company must have to successfully pursue sustainable business model innovation?
 - a. What part of the business should the company focus on in order to develop this capability?
 - b. What characteristics of a company demonstrate that it has developed this capability?
5. What are the major obstacles to sustainable business model innovation?
 - a. What capabilities are necessary to overcome this obstacle?
 - b. What should a company do to avoid this obstacle?

6. Is there anything specifically about fashion companies or about the fashion industry as a whole that makes sustainable business model innovation difficult, as opposed to in other industries?
7. Is it possible to measure sustainable business model innovation?
 - a. What measures would you use?
 - b. Are traditional business measures adequate?
8. What else do I need to know about sustainable business model innovation?
9. Do you have any suggestions for who else I should interview for this study?

Appendix E

SURVEY QUESTIONS

This survey is Phase II of a research study on sustainable business model innovation. The purpose of this survey is to receive feedback on the quality and utility of measures that have been developed to capture sustainable business model innovation. The survey should take approximately 15 minutes to complete.

The research team does not expect your participation in this study will expose you to any risks different from those you would encounter in daily life. There will not be any costs or compensation for participating in this research.

Taking part in this study is entirely voluntary. If at any time you decide you no longer want to participate in both phases, please inform the research team by telling the Principal Investigator about your decision. There are no consequences for deciding to withdraw before completing Phase II.

If you have any questions about this study, please contact:
Kelly Allen (Principal Investigator)
(303) 587-6843
keallen@udel.edu

Dr. Marsha Dickson (Academic Advisor)
(302) 690-5060
dickson@udel.edu

Questions for each concept:

1. Are these measures important for capturing sustainable business model innovation?
 - a. Extremely important
 - b. Very important
 - c. Moderately important
 - d. Slightly important
 - e. Not at all important
2. Do you see duplication in the measures? Please mark which measures are duplicative and explain.
 - a. (The measures for each concept were listed with a comment section)

- b. (The measures for each concept were listed with a comment section)
 - c. (The measures for each concept were listed with a comment section)
 - d. None of the measures are duplicative
- 3. Do you think any of the measures could be eliminated? Please mark which measures could be eliminated and explain.
 - a. (The measures for each concept were listed with a comment section)
 - b. (The measures for each concept were listed with a comment section)
 - c. (The measures for each concept were listed with a comment section)
 - d. None of the measures should be eliminated
- 4. Are the measures relevant for both small and large companies?
 - a. Small companies only
 - b. Large companies only
 - c. Both small and large companies
- 5. Please provide additional comments on the measures in this concept.
 - a. (Essay field)

Summary questions at the end of the survey:

- 1. What ideas are missing from the measures, but are critical for capturing sustainable business model innovation?
 - a. (Essay field)
- 2. If a company had top scores for all measures, would you say sustainable business model innovation is occurring? Please explain.
 - a. (Essay field)
- 3. Which five concepts are most critical for capturing sustainable business model innovation? Please select five concepts.
 - a. Sustainability Vision
 - b. Integration
 - c. Transparency
 - d. Ambidexterity
 - e. Resiliency
 - f. Mindfulness
 - g. Systems-Thinking
 - h. Open Innovation & Alliances
 - i. SBMI Requirement
- 4. A company would find these measures helpful for identifying key areas to focus on for sustainable business model innovation.
 - a. Strongly agree

- b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly disagree
5. Investors would find these measures helpful for assessing sustainable business model innovation within a company.
- a. Strongly agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly disagree

Appendix F

PHASE II MEASURES

Important Notes:

- I would advise a company completing this assessment to answer the questions in reference to **the last 12 months**
- **Sustainable Business Model Innovation (SBMI)**: innovation that changes the three business model dimensions of value proposition, value creation, and value capture and simultaneously creates value for the company, society, and the environment
- **Sustainability Innovation**: innovation that a company engages in for the purpose of achieving sustainability benefits

SBMI CONCEPTS

Concept 1: Sustainability Vision

SV1 Leadership Buy-in

Does the company's leadership champion sustainability innovation?

- 1 – The company's leadership does not champion sustainability innovation
- 2 – Some but not all of the company's leadership champions sustainability innovation
- 3 – All of the company's leaders champion sustainability innovation

SV2 Easy to Explain

Is the company's sustainability vision easy to explain to internal and external stakeholders?

- 1 – The company has not defined its sustainability vision
- 2 – The company's sustainability vision is difficult to explain
- 3 – The company's sustainability vision is easy to explain

SV3 Three Pillars

Does the company's sustainability vision equally support the three dimensions of sustainability (people, planet, profit)?

- 1 – The company's sustainability vision prioritizes one dimension over the others
- 2 – The company's sustainability vision includes two dimensions, but excludes one

- 3 – The company's sustainability vision equally supports all three dimensions of sustainability

Concept 2: Integration

IS1 Internal Communication

Has cross-functional collaboration for sustainability innovation taken place between all departments?

- 1 – Cross-functional collaboration has not taken place
- 2 – Some teams have participated in cross-functional collaboration
- 3 – All teams have participated in cross-functional collaboration

IS2 Embedded Responsibility

Have all employees been evaluated on sustainability innovation milestones?

- 1 – No employees have been evaluated on sustainability innovation milestones
- 2 – Some employees have been evaluated on sustainability innovation milestones
- 3 – All employees have been evaluated on sustainability innovation milestones

IS3 Hiring

Is sustainability innovation a criterion of the hiring process for job positions?

- 1 – Sustainability innovation is not part of the hiring criteria for any job positions
- 2 – Sustainability innovation is part of the hiring criteria for some job positions
- 3 – Sustainability innovation is part of the hiring criteria for all job positions

IS4 Training

Have employees received cross-functional training and skills development for sustainability innovation?

- 1 – Employees have not received cross-functional training or skills development
- 2 – Some employees have received cross-functional training and skills development
- 3 – All employees have received cross-functional training and skills development

IS5 Measuring SE Impact

Has the company tracked its social and environmental impacts?

- 1 – The company has not tracked its social or environmental impacts
- 2 – The company has tracked some of its social or environmental impacts
- 3 – The company has tracked all of its social and environmental impacts

Concept 3: Transparency

T1 Traceable

Has the company traced all of its supply chains down to raw materials?

- 1 – The company has not traced its supply chains
- 2 – The company has traced parts/some of its supply chains
- 3 – The company has fully traced all of its supply chains

T2 Publicly Available

Has the company publicly reported its sustainability impacts?

- 1 – The company has not publicly reported its sustainability impacts
- 2 – The company has publicly reported its sustainability impacts

T3 Commitment

Has the company publicly reported its strategies for improving its sustainability impacts?

- 1 – The company has not publicly reported its strategies
- 2 – The company has publicly reported its strategies for some of its impacts
- 3 – The company has publicly reported its strategies for all of its impacts

Concept 4: Ambidexterity

AM1 Separate Structure

Does the company have a business unit/subsidiary/incubator dedicated to sustainability innovation?

- 1 – No, there is not a business unit/subsidiary/incubator dedicated to sustainability innovation
- 2 – Yes, there is a business unit/subsidiary/incubator dedicated to sustainability innovation

AM2 Access to Separate Resources

Do sustainability innovation projects have access to their own resources (i.e. human and financial)?

- 1 – Sustainability innovation projects do not have access to resources
- 2 – Sustainability innovation projects draw from the same resources as the core business
- 3 – Sustainability innovation projects have access to their own resources

AM3 Investment

Has the company invested in new sustainability innovation research or projects?

- 1 – No, the company has not invested in new sustainability innovation research or projects
- 2 – Yes, the company has invested in new sustainability innovation research and projects

AM4 Boundaries

Has the company defined its risk tolerance for sustainability innovation projects?

- 1 – No, the company has not defined its risk tolerance for sustainability innovation
- 2 – Yes, the company has defined its risk tolerance for sustainability innovation

AM5 Expectations

Do sustainability innovation projects have more time to achieve a return on investment (ROI) than projects related to the core business?

- 1 – Sustainability innovation projects have less time to achieve ROI
- 2 – Sustainability innovation projects have the same time to achieve ROI
- 3 – Sustainability innovation projects have more time to achieve ROI

AM6 Ideas

Do employees at every level of the company have the opportunity to contribute ideas for sustainability innovation?

- 1 – Employees do not have the opportunity to contribute ideas
- 2 – Some employees have the opportunity to contribute ideas
- 3 – All employees have the opportunity to contribute ideas

Concept 5: Resiliency

R1 Pivot

Is the company able to change directions quickly?

- 1 – The company is not able to change directions quickly
- 2 – The company is able to change directions quickly

R2 Learn

Has the company captured what was learned from failed sustainability innovation projects (i.e. by producing failure reports)?

- 1 – The company has not captured what was learned from failed sustainability innovation projects
- 2 – The company has captured what was learned from failed sustainability innovation projects

R3 Challenges

Has the company prepared employees to persevere through the challenges and frustration of sustainability innovation?

- 1 – The company has not prepared employees to persevere
- 2 – The company has prepared some employees to persevere
- 3 – The company has prepared all employees to persevere

R4 Sense of Urgency

Has the company set equally ambitious goals for sustainability innovation as for financial success?

- 1 – The company has not set goals for sustainability innovation
- 2 – The company has set less ambitious goals for sustainability innovation
- 3 – The company has set equally ambitious goals for sustainability innovation

Concept 6: Mindfulness

M1a Gap Analysis

Does the company have strategies in place to achieve its sustainability vision?

- 1 – The company does not have strategies in place
- 2 – The company does have strategies in place

M1b Gap Analysis

Has the company assessed its progress toward achieving its sustainability vision?

- 1 – The company has not assessed its progress
- 2 – The company has assessed its progress

M2 Opportunity Orientation

Has the company assigned specific people with the task of scanning for emerging sustainability opportunities in the market?

- 1 – The company has not assigned people to this task
- 2 – The company has assigned specific people to this task

M3 Critique

Has the company assigned specific people with the task of assessing the business model fit for future sustainability?

- 1 – The company has not assigned people to this task
- 2 – The company has assigned specific people to this task

Concept 7: Systems-Thinking

SYS1 Lifecycle

Has the company measured the impacts of the entire lifecycle of its product or service offerings?

- 1 – The company has not measured these impacts
- 2 – The company has measured these impacts for some offerings
- 3 – The company has measured the impacts of the entire lifecycle of all its offerings

SYS2 Circularity

What percent of the company's sustainability innovation efforts were dedicated to producing closed loop systems?

- 1 – 0-25%
- 2 – 26-50%
- 3 – 51-75%
- 4 – 76-100%

SYS3 Upstream

Has the company measured the impacts of its business operations on upstream stakeholders (i.e. suppliers and their surrounding communities)?

- 1 – The company has not measured impacts on upstream stakeholders
- 2 – The company has measured impacts on some upstream stakeholders
- 3 – The company has measured impacts on all upstream stakeholders

SYS4 External Context

Has the company engaged with external parties to work toward systemic changes that support a sustainable future?

- 1 – The company has not engaged with others to create systemic change
- 2 – The company has engaged with others to create systemic change

SYS5a Consumer Behavior

Has the company promoted the adoption of sustainable consumption habits (i.e. through consumer education or offering sustainable products/services)?

- 1 – The company has not promoted sustainable consumption habits
- 2 – The company has promoted the adoption of sustainable consumption habits

SYS5b Consumer Behavior

Has the company measured the proportion of consumer spending on sustainable products and services versus spending on traditional offerings?

- 1 – The company has not measured the proportion of spending on sustainable products or services
- 2 – The company has measured the proportion of spending on sustainable products and services

SYS5c Consumer Behavior

If the company selected [2] for question SYS1b: Is the proportion of consumer spending on sustainable products and services...?

- 1 – Less than spending on core products and services
- 2 – Equal to spending on core products and services
- 3 – More than spending on core products and services

Concept 8: Open Innovation + Alliances**OIA1 Collaboration**

Has the company formed new partnerships or actively engaged with existing partners in the industry to address shared sustainability problems?

- 1 – The company has not formed new partnerships or actively engaged with existing partners
- 2 – The company has formed new partnerships or actively engaged with existing partners

OIA2 Pre-Competitive

Has the company shared pre-competitive information (i.e. related to methodologies, tools, etc.) with other companies to help scale sustainability innovation in the industry?

- 1 – The company has not shared pre-competitive information with other companies
- 2 – The company has shared limited pre-competitive information with other companies
- 3 – The company has shared all available pre-competitive information with other companies

Concept 9: SBMI Requirement**SBMI1 Market Fit**

Have the company's sustainability innovations achieved profitability?

- 1 – None of the innovations have achieved profitability
- 2 – Some of the innovations have achieved profitability
- 3 – All of the innovations have achieved profitability