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SHARED VALUE CREATION IN CIRCULAR BUSINESS MODEL: CASE RELOOPING FASHION INITIATIVE

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ABSTRACT

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The concepts of shared value creation and circular economy model have prevailed in several fields of research. However, what have not been studied is the potential of circular economy as a sustainable business model to create shared value. Hence, the purpose of this study is to examine the potential of circular business model to simultaneously create value to society and financially lucrative business. In addition to constructing an extensive view of these two concepts, this study aims to gather existing performance measurement practices suitable for shared value creation assessment. The empirical research is conducted as a single case study of a circular business project Relooping Fashion Initiative, by interviewing nine parties of the project. The findings of this study indicate that there is huge potential of creating shared value through implementation of circular economy model. However, the achievement of that potential depends on how the circular model is implemented and how well shared value creation is understood. The study contributes to the existing literature by extending the value proposition of circular economy concept with social sustainability and business context. Additionally, it provides empirical evidence about shared value creation and measurement practices in different sizes and forms of businesses.

TIIVISTELMÄ

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Jaetun arvonluonnin ja kiertotalouden käsitteet ovat esiintyneet laajalti aiemmassa kirjallisuudessa. Kiertotalousmallin mahdollisuuksia jaetun arvon luomiseen ei kuitenkaan ole tutkittu aiemmin. Tämän tutkielman tarkoituksena on tutkia kiertotalouden mallin mahdollisuuksia saavuttaa sekä yhteiskunnallista hyötyä että taloudellisesti kannattavaa liiketoimintaa. Tutkielma pyrkii muodostamaan kokonaisvaltaisen käsityksen näistä kahdesta käsitteestä, sekä selvittämään jaetun arvonluonnin arviointiin soveltuvia mittaus- ja raportointikäytäntöjä. Empiirinen tutkimus toteutettiin tapaustutkimuksena haastattelemalla yhdeksää Relooping Fashion hankkeen osapuolta. Tutkimuksen tulokset osoittavat, että kiertotalouden mallilla toteutettu liiketoiminta tarjoaa merkittävää potentiaalia jaetun arvon luomiselle. Toisaalta potentiaalin saavuttaminen riippuu kiertotalous-pohjaisen liiketoiminnan toteutustavasta sekä siitä, miten hyvin jaetun arvonluonnin periaatteet on ymmärretty. Tutkimus avartaa nykyistä kiertotalouden tutkimuskirjallisuutta arvioimalla kiertotalouden mahdollisuuksia yhteiskunnallisen ja liiketoiminnallisen ulottuvuuden kautta. Lisäksi, tutkimus tarjoaa empiiristä näyttöä jaetun arvon luonnista ja arviointikäytännöistä erityyppisten ja -kokoisten yritysten näkökulmasta.

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Essi Becker

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1 INTRODUCTION

Today's markets and businesses are confronting revolutionary threats. Most of the existing forms of business, consumption and production are not sustainable in the way that would not endanger the ability to meet the needs of future generations and partly even current generations (WCED's Brutland report, 1987). To begin with, the scarcity of existing natural resources is reality, and hence the supply costs of those materials are rapidly increasing, because of increasing transportation distances, complication of extraction and poorer quality of resources (Trends e-magazine, 2012). On the other hand, the demand for raw materials is continuously increasing, not only because of rapidly growing population (Trends e-magazine, 2012), but also remarkably increased consumption especially in electronics, clothing and consumer goods, resulted by e.g. globalization, deregulation of capital markets, development in ICT and off-shoring production (Murray et al., 2015). Contrary to the increasing raw material and production costs, today's competition is highly based on low prices, accelerating even higher levels of consumption.

Not only do the current markets expose challenges to sustainable economic growth, but also especially to environmental and social sustainability. Intensive raw material extraction disables the natural resource regeneration and leads to e.g. soil erosion, lack of water and impoverishment of biodiversity. Furthermore, massive industries, transportation and food production are using loads of toxic chemicals and producing tremendous amounts of emissions and waste, fostering climate change and polluted atmosphere. Moreover, poor working conditions in low cost developing economies (Soundararajan & Brown, 2016) are exposing people to these harmful chemicals and polluted air, lacking nutrition and pure drinking water. People on the 'top of the pyramid' i.e. in developed societies might be blind to this social injustice, such as insufficient income, child labor, slavery, racial discrimination, and unsafe workplaces, related to the products they use in daily basis (Hitchcock & Willard, 2011).

However, businesses and industry have long called for guidance in strategies and operating models for sustainable development. There is a prevalent need to consider wider systems and stakeholders in business and accounting decisions

associated with environmental management and sustainability reporting. (Murray et al., 2015) For instance cleaner technologies or clean-tech have received much attention lately. Clean-tech refers to any new technological, service and business model innovations, which apply more eco-efficient, productive and sustainable use of natural resources. Clean-tech has been recognized to offer various benefits for the adopter, such as reduced emissions and waste production, less energy, water and land use, resulting lower costs and sustainability (Montalvo & Kemp, 2008). Thus clean-tech simultaneously drives environmental protection and sustainable economic growth, resulting a huge value potential (Montalvo, 2008).

Therefore, this study focuses on one well-recognized concept of cleaner production, the circular economy model (CE). CE model has been claimed to offer a path towards sustainable growth by shifting current economic growth models towards resource conservation and healthy consumption orientation (Zhijun & Nailing, 2007; Ghisellini et al., 2016). Moreover, CE model has a potential to realize largest total net value, by minimizing the negative influence and maximizing the positive value of economic processes (Zhu, 2013). However, existing documentation of CE concept have noticed the need for more comprehensive assessment of sustainability, especially the lack of social impact and business opportunities of CE model (Andersen, 2007; Murray et al., 2015; The Club of Rome, 2015; Hobson & Lynch, 2016). Hence, this study examines the shared value creation (by Porter & Kramer, 2006; 2011) potential of CE model in business context.

1.1 Research context and framework of the study

This study strives to contribute to both CE and CSV theory by bringing these two significant concepts together. First, the research field on CE has only lately started to flourish, even though the conceptual roots of CE reach way back to 1966, with the idea of earth as a single spaceship with limited resources by Kenneth Boulding. (see e.g. Pearce & Turner, 1990; George et al. 2015; Heshmati, 2015). An extensive empirical research data is gathered from China (see e.g. Yuan & Moriguichi, 2006; Zhijun & Nailing, 2007; Geng & Doberstein, 2008; Su et al. 2013), where the CE model has been promoted as a national sustainable development strategy since 2002 (Su et al., 2013). However, prevailing research in the context of CE has

primarily focused on environmental economics, industrial ecology (e.g. Pearce & Turner, 1990; Andersen 2007), waste management and recycle rather than reuse (Ghisellini et al., 2016). Only in the last few years, more literature on CE as sustainable business model has emerged, for instance on CE and economic growth (George et al, 2015), on CE product development (Singh & Ordonez, 2015) and CE implementation in manufacturing industry (Lieder & Rashid, 2015). Additionally, manifold reports (by e.g. Ellen MacArthur Foundation, 2013a; 2013b; 2015; De Groene Zaak & Ethica, 2015; Sitra, 2015a; 2015b; RSA, 2016) have been published on CE initiatives that complement a more practical view about the opportunities and challenges of CE model. This study strives to fill the research gap of CE literature (noted by Murray et al., 2015; Hobson & Lynch, 2016), by focusing on social sustainability and providing evidence from business context.

Second, the social context and business opportunities of CE model are examined through the concept of shared value creation (CSV) by Porter & Kramer (2006; 2011). The basic idea of CSV is that business and society have mutual dependency. That is lucrative businesses need healthy society and can foster it by addressing the social challenges through core competencies and strategy. (Porter, 2011; Werther & Chandler, 2011, 3-4; Michelini & Fiorentino, 2012) The existing literature on CSV (e.g. Porter & Kramer, 2006; 2011; Pavlovich & Corner, 2014; Corner & Pavlovich, 2014) has mostly neglected the practical implications as well as theoretical precepts (see Dembek & Singh, 2016) of the concept in business context. To contribute to Michelini's & Fiorentino's (2012) comparative research on CSV in new business models, this study focuses on the potential of CE as one specific 'hybrid business model'. Thus, in addition to CSV literature, documentation of social/sustainable business models is reviewed to understanding of CE model's potential for shared value creation (Ghisellini et al., 2016; Witjes & Lozano, 2016; Thompson & Macmillan, 2010).

Furthermore, lack of suitable performance assessment and data systems have been stressed both in CE (Andersen, 2007; Geng & Doberstein, 2008; Su et al., 2013) and CSV literature (Porter & Kramer, 2006; 2011). Social impact has been stated especially difficult to measure and address (see e.g. Porter & Kramer, 2006; Chatterji & Levine 2006; Andersen, 2007; Yunus et al. 2010). Moreover, there is a

growing literature of stakeholder involvement for accountability, social accounting and inseparability of value components (see e.g. Messner, 2009; Andon et al., 2015). In order to find best assessment practices for CE, this study reviews the existing performance measurement and reporting practices for CSV.

Figure 1 represents the framework of the study. First, CSV in clean-tech industry illustrates the big picture of the research problem, striving to address the need for more holistic value thinking in this field. Second, the theory of sustainable business models gives base for CE models value proposition. Third, CE model is one key concept of this study, thus a comprehensive review of the theory is conducted. While previous research on CE has mostly neglected the social dimension of sustainability, the review strives to constitute a theoretical basis for CE models opportunities and challenges for social value creation. Forth, a comprehensive theoretical background of CSV as another key concept is scrutinized. Furthermore, CSV includes the need for assessing the economic, social and environmental performance of a sustainable business. Finally, based on the extensive theoretical basis and findings from the empirical case Relooping Fashion Initiative (RFI), this study strives to critically analyze the CSV potential of CE model in business context.

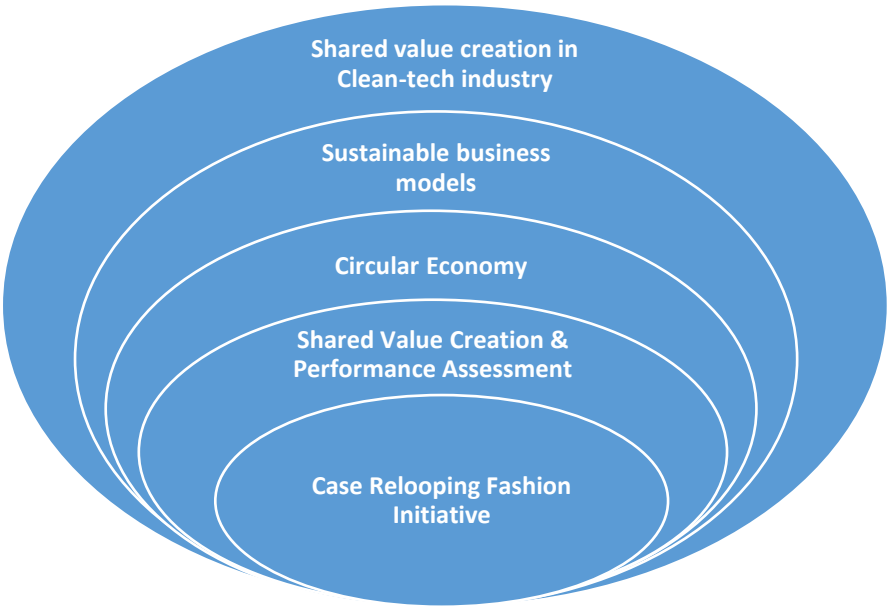

Figure 1. Framework of the study

1.2 Purpose of the study, research questions and delimitations

The purpose of this study is to clarify and explain creation of share value in a circular business model. In order to achieve high level understanding of shared value creation, extensive theoretical background of sustainable business models, CSV concept and CSV assessment practices are covered. Additionally, this study reviews the existing research documentation on CE model, in order to find opportunities and challenges of shared value creation. The empirical evidence of this study is gathered by analyzing the experiences from case project RFI, which aims to reproduce old cotton clothing into new textile material using revolutionary cleaner technology and the principles of circular business model. While the environmental influences and advantages of the project are quite well recognized, the CSV of the project remains to be investigated in this study.

By analyzing the results of the empirical evidence and reflecting the existing literature on CSV and CE, this study aims to answer the following research problem:

What kind of potential is there to create shared value in circular business model?

The main research problem can be better analyzed through the sub-question below:

What are the opportunities and challenges of CE model for social impact?

Additionally, question of how shared value can be assessed in CE model is stated as second sub-question:

What existing performance measurement and reporting practices (financial and non-financial) can be used for CSV assessment?

This research hypothesizes that in a CE model, CSV can be direct or indirect depending on how model is implemented. The Relooping Fashion Initiative can be assumed to create shared value mainly indirectly, while the main purposes of the project is not to e.g. employ people out of regular labor market, but to reuse clothing waste effectively and financially profitably. Social benefits supposedly are created by developing new economically and environmentally sustainable business models, by reducing the amount of clothing waste, saving virgin natural resources and by

doing self-sufficient and profitable business, which again creates wealth and new job opportunities for society.

The study is outlined to focus on shared value creation in Finnish circular business model. First, the scope of this study concerns CE model, which has become well recognized sustainable strategy for instance in EU's Circular Economy Package (European Commission, 2016) and in Finnish national economy (Sitra 2015b). While CE model at national policy level has been quite well documented, this study focuses on CE model in business context. Another delimitation is to concern strategic sustainable value creation, especially focusing on social value creation, which has not received enough attention on CE literature. Nevertheless all three dimensions of sustainability are part of this study, because of their interconnected nature. Finally, the empirical evidence is based on Finnish case project in textile industry, thus not providing universal conclusion, but rather well-founded assumptions and in-depth analysis of a real life occurrence.

1.3 Research methods and data

This research is carried out with qualitative approach. The purpose of qualitative research is to describe the real life occurrences as comprehensively as possible, while the reality is manifold, complex and interrelated. Instead of aims to objectivity and independence, the influence of researcher's values and attitudes need to be recognized in qualitative research. Additionally the meaning of the *quality* should be understood by discovering the findings of this specific case and distinguishing them from the possibility of other findings. (Hirsjärvi et al. 2009, 160-161)

The purpose of the theoretical part is to form an extensive understanding of the two key concepts and phenomena in the framework of this research. Firstly, the theoretical part aims to aggregate relevant theories about sustainable business models, strategic approaches and value creation compared to conventional business models. Secondly, a coherent view of CSV is based on Porter & Kramer's (2006; 2011) theory and other related concepts (as Blended value by Emerson, 2003). Furthermore, some financial and non-financial measurement tools suitable for CSV are reviewed in order to find best practices to evaluate CSV in a CE model. Thirdly, prevailing researches and reports on CE model are reviewed in order to

achieve comprehensive understanding of the model's opportunities and challenges for creating shared value.

The empirical part is conducted as a case study, by interviewing nine partner organizations of RFI. The interview is carried out as a theme interview. In this approach no specific questions are listed, only the themes of the discussion and supporting questions are drafted in advance, so that the interviewer is able to raise further questions within the discussion (Hirsjärvi & Hurme, 2000, 47-48). The aim is to achieve comprehensive view of the project, including consumers, and hence consumer aspect is reviewed via Ethica's consumer research and inquiry. The findings of this study are based on analysis of the theoretical framework in reflection to the experiences and practices of RFI partner organizations. The aim is to find concrete examples and various aspects about CSV in CE model. Furthermore, partner organizations' performance measurement and reporting practices are discussed.

1.4 Structure of the research

The structure of this study is following. First, theoretical background of the study is covered in sections two and three. The second section moves from wider perspective of sustainable business models to CSV concept and finally to the measurement and reporting of social value. The third section covers the literature on CE, the challenges and opportunities of the concept, and concludes with the CSV potential of CE. In the fourth section, research methodology, brief description of the case RFI and textile industry's current state are given. Furthermore, the results of the study are presented through in-depth analysis and summarized in the end of section. Finally, fifth section discusses the empirical findings and contribution to the existing literature. The study concludes with evaluation of reliability and validity, research limitations and possible further research questions.

2 THE FIELD OF SUSTAINABLE VALUE CREATION

In order to create value in more comprehensive and sustainable means (i.e. social, environmental and economic value creation), it is arguable, that also business models have to be build and developed in that sense. Research has argued that strategically managed and more proactively implemented CSR work and development for sustainability can create competitive advantage and pay off (Burke & Logsdon, 1996; Nidumolu et al. 2009; Porter & Kramer, 2006; 2011; Yunus et al., 2010). Moreover, change towards sustainable business models has commonly included stakeholder engagement and ethical sourcing, resource efficiency and design for circular value systems as well as open source innovations and network value creation, which all are cut out for creating win-win situations (Porter & Kramer, 2011; Wells, 2013; Rauter et al., 2017). This chapter reviews the literature of business models for sustainability, of CSV and its implications as well as performance and impact measurement tools for CSV purposes.

2.1 Sustainable business models

Business model conceptualization and development has been popular in managerial literature since latter half of 1990s (Zott et al., 2011; Demil & Lecocq, 2010). Still, there is no generally accepted definition of business model concept (Zott et al., 2011). Some definitions find it more as holistic conceptual understanding of how company does business, a structure and governance for firm's different areas to activate and communicate, defining the whole firm's value creation and value capture (Amit & Zott, 2001; Zott & Amit, 2008; Demil & Lecocq, 2010; Teece, 2010). Whereas other definitions see business model concept more at system-level, representing firm's key components, related material and cognitive aspects, which include company's network of relationships, the key operations of company's business processes and resource base as well as the finance and accounting concepts (Tikkanen et al. 2005). Furthermore business model can be seen as a production and delivery system for company's products and services as well as organizational learning that can accumulate competitive advantage if exploited properly (Itami & Nishino, 2010).

Existing literature has identified several components and approaches for business models. Firstly Itami & Nishino (2010) point out that regardless of the various definitions, the business model is commonly seen as composed of two elements, "a business system and a profit model*"*. A business system is '*the system of works*' that is designed for producing and delivering the firm's products and services to the customers. A profit model is a firm's intended way of making profit of its given business. While the latter is the firm's strategic intent and often gains the higher attention, the former is the '*real meat*' of firm's business model and the way of realizing the strategic intent. In addition to delivery system, which makes the conventional business possible, the business system also includes a learning system. Needless to say, it can be assumed that these two elements should work coherently, in order to generate successful business model and intended value creation.

Secondly, there are three elements distinguished in business model concept literature: *Value proposition, value constellation and profit equation* (Yunus et al., 2010). Compared to division by Itami & Nishino above, this model distinguishes the *business system* further into *value proposition* – referring to the product or service proposed to customer - and to *value constellation* referring to value creation and delivery of product or service which includes the company's own internal value chain as well as its external value network with its suppliers and partners. The third component, *profit equation*, revenue model or value capture is defined as a financial translation of the other two, depending on the value captured from the value proposition, and the cost and capital structuring in the value constellation. (Yunus et al, 2010; Osterwald et al., 2010; Boons & Lüdeke-Freund, 2013; Witjes & Lozano, 2016)

Finally, two different approaches of business model concept, static and transformational approach, have been noted. The former, static approach emphasizes the expression 'model' that represents the coherence between company's core components. (Demil & Lecocq, 2010) This approach sees business model as connection or logic between innovation potential and the realization and capture of the potential value of that innovation (Chesbrough & Rosenmbloom, 2002). In the static view, business model is the system of value creation for the

company, and its stakeholders (Amit & Zott, 2001). The latter, transformational approach sees business model as a tool for change and innovation either in the company or in the business model itself. As a matter of fact, new revolutionary innovations have lately emerged as new business models that have potential to shake whole industries. (Demil & Lecocq, 2010; Thompson & Macmillan, 2010)

As a matter of fact, neither of these two approaches might reach the full potential of business model concept. While the static approach studies the relationship between a given business model and firms performance and gives a consistent view of different business model component relations, it ignores and often fails with the business model evolution processes. On the other hand, while the transformational approach has its focus in the ways of changing and developing business models, it ignores the dynamic interaction between different business models components and the ability of an existing business model to evolve and change itself. By this view they define business model evolution as "a fine tuning process involving voluntary and emergent changes in and between linked core components". (Demil & Lecocq, 2010) This emphasizes the need for retrospective and prospective analysis of firm's value creation for its internal and external stakeholders (DaSilva & Trkman, 2014; Witjes & Lozano, 2016).

Stakeholders are increasingly demanding firms to address sustainability issues for the entire value chain. The relation between business model evolution and firm's sustainability depends on firm's willingness to react to emerging changes and firm's ability to 'dynamic consistency', i.e. firm's capability to develop and sustain its performance while changing its business model. (Demil & Lecocq, 2010) Thus firm's business models should be holistically transformed towards sustainability by considering all the stakeholders and continuous improvement (Stubbs & Cocklin, 2008; Witjes & Lozano, 2016). Some of the ideas of conventional business model literature can be applied to the sustainable business models as well, and to put it another way, some sustainable business models and innovations can show up shaking the conventional business models and industries. Even whole new markets can be opened by visionary businesses that create new business models with the idea of sustainable wealth creation (Thompson & MacMillan, 2010). Actually, while investigating special characteristics of sustainable businesses, Rauter et al. (2017)

could not find substantial differences between sustainable and traditional business models, although some special components are needed for sustainable business model development. As such, sustainability in the context of business means adopting sustainable strategies and activities, whereas business model development is one way to implement those strategies (Rauter et al., 2017).

Sustainable business models can be defined somewhere between the two extreme types of business, profit-maximizing and non-profit organizations (Yunus et al. 2010; Porter & Kramer, 2011; Michelini & Fiorentino, 2012). Sustainable business models are more cause-driven than profit-driven, while social and environmental sustainability are driving forces of the business strategy and decision making. However, profit equation of sustainable business model need to be self-sufficient in the sense that it has to cover its full costs and repay to its investors. As such, sustainable business is not charity, and hence the managerial mindset should be quite similar to that in conventional business. (Stubbs & Cocklin, 2008; Yunus et al. 2010)

There are two ways for adapting business model for sustainable development: redefining existing model according to sustainable principles or subjecting business model to radical change (Rauter et al., 2017). Either way there is a need for business model innovation. Similarly to any new business model innovations, building sustainable business model requires “new value propositions, value constellations and profit equations*”;* generation of new sources of profit by finding new value proposition-value constellation combinations. Three key actions are substantial to both conventional business model innovation and sustainable business model innovation: challenging conventional thinking, finding complementary partners and undertaking continuous experimentation. (Yunus et al., 2006) Challenging of conventional thinking in company’s internal structures and culture is essential, for creating new strategies and changing the rules of existing markets and competition. Furthermore, collaborating with all key stakeholders, finding new partners or different forms of collaboration are required to achieve a whole sustainable system, which organization is part of. Consequently co-operators from different industries and sectors can access new kind of resources and knowledge. Finally, working in a dynamic context such as sustainable development includes uncertainty and need

for continuous development. Strategic experimentation of offers a path where new ways of business can be tested in smaller steps and with minor risk and major learning, when outcomes are uncertain and little or information is available. (Stubbs & Cocklin, 2008; Yunus et al. 2010) This kind of careful redesign of business model can support systematic integration of sustainability into existing conventional businesses and encourage start-ups to create new innovative sustainable businesses (Stubbs & Cocklin, 2008; Porter & Kramer, 2011; Schaltegger, et al., 2012; Bocken, et al., 2014).

Business model innovation has been recognized to deliver social and environmental sustainability to industrial systems (Bocken et al., 2014), not by technical imagination alone, but also by innovations in consumption, producing, value concept, and social structures (Wells, 2013). However, business model innovation for social and environmental sustainability require some specific building blocks in addition to those three key actions above similar to all redesigned business models. For instance, Yunus et al (2010) have identified two specific targets for social businesses; finding socially oriented shareholders and stating social profit equity. Sustainable businesses are accountable not only to their shareholders, but to all relevant stakeholders. Thus shareholders should understand the importance of social and environmental mission. In order to avoid the conflict of interest between shareholders' profit maximization and social value creation, alternative sources and ways of funding should be investigated. Although social and environmental objectives do not necessarily conflict with economic goals in long-term, the clear probability for ongoing conflicts should be recognized. Additionally, social and environmental goals should be clearly defined and tracked. Achieving the intended impact to society or environment as well as the financial value of those to business should be indicated to investors and other stakeholders.

In conclusion, some specific adjustments for building sustainable business models can be highlighted. Firstly, it requires the value propositions and the value constellations to be constructed in new ways, through innovative links between all stakeholders. These targeted stakeholders should be clearly specified in the early stage of business model creation, to be able to expand the value creation to all stakeholders, instead of only customers and shareholders. Secondly, the desired

social and environmental outcomes should be clearly defined through comprehensive eco-system view, resulting sustainable profit equation. (Yunus et al., 2010) Furthermore, building holistic sustainable business requires continuous, joint and simultaneous efforts for social, environmental and economic sustainability (Bocken et al., 2014; Rauter et al., 2017). Yunus et al. (2010) suggest that social businesses can also address environmental issues, while those are often closely interconnected to social wealth issues. And to put it another way, eco-friendly business models can also be applied to social issues, if all stakeholders are taken into account. Finally, the economic profit equation, i.e. targeting full cost and capital recovery, should not be ignored, while it is the path to self-sufficient and profitable business.

2.2 Shared value creation

The concept of creating shared value (CSV) was initially presented in "*Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility* by Michael E. Porter and Mark R. Kramer in 2006. The main idea of the concept was to bring a more strategic point of view to corporate social responsibility (CSR) thinking, and to find the link between firm's core business, social objectives and competitive advantage. Nothing short of similar ideas have been introduced earlier in strategic CSR literature, stakeholder theory as well as Emerson's (2003) concept of Blended value, which refers to idea of simultaneous social and economic value creation within the same value proposition. This study uses the concept of CSV in the context of circular economy, while it emphasizes the strategic incentives in collaboration with a firm's multiple stakeholders and surrounding society. However, viewpoints of Emerson's and other studies related to the field of research are reviewed for a wider perspective.

Three important questions are related to CSV concept. This section investigates the question of what is actually meant by *'shared'*, and the background of its importance. Secondly, the concept of '*value'* is clarified as well as its development and relation to societies. Finally, *'creation'* leads to question of *how* CSV can be implemented.

2.2.1 Background of CSV concept

The roots of shared value are in the idea, that business and society are interdependent. For their existence businesses need well-functioning societies, consisting of consumers, investors, governments and non-profit organizations, which provide demand for products and services, public assets, funding as well as supportive infrastructure and environment. On the other hand, for-profit sector is the largest innovative part in economic society. Thus a well-functioning society needs businesses that provide most of the jobs, innovations and wealth creation to citizens, by delivering housing, food, medical care and other necessities of life. (Werther & Chandler, 2011, 3-4; Porter & Kramer, 2011)

This ideal model has worked in the past, when companies took liability for their local communities. Nevertheless, a narrower view of capitalism, where the only responsibility of a business is to maximize the profits of its shareholders, has prevailed for a long time (see e.g. Friedman, 1970). Moreover, a large section of shareholders have turned “from investors to speculators”, investing rather in stocks than in companies and gambling on share price fluctuations (Werther & Chandler, 2011, 44). Thus a growing competition and short-term performance pressures have resulted, that firms rely more on outside vendors, outsourcing and offshoring to several locations, which have weakened their control over supply chains and connection to local communities. In this world, the main goal for many companies has been to make customers buy more and more with cost reductions achieved by restructuring, personnel reductions and relocations. These actions have led to economic efficiency, but simultaneously to less innovative performance and lack of clear core competencies. In addition, these actions have costed tremendous environmental and social harms. While the importance of strategy, positioning and value chain management have been recognized, the wider impact of social and environmental issues on firms value creation have only recently found itself in strategy and management debate. (Porter & Kramer, 2011)

2.2.2 The problems of CSR

The need for CSV has emerged because of the flaws in the capital system and the changing nature of value. Usually businesses have responded on the claims of

social, environmental and economic problems with CSR work and reports. However, the more money has been spend to CSR, the more businesses have been blamed for social failures, such as tax avoidance. (Porter & Kramer, 2011; Guenther, 2016)

There can be several reasons for hitherto ineffective CSR work. Firstly, businesses still often see the financial and social objectives juxtaposed and even against each other, although they are profoundly interconnected. The four CSR principles, i.e. moral obligation, license to operate and reputation are good arguments, but they all focus on the tensions between business and society. This easily leads to uncoordinated and unrelated efforts that neither make significant social impact nor improve firm's long-term competitive advantage. Secondly, CSR is too often seen in generic ways, instead of as a strategic premise and source of competitive advantage. (Porter & Kramer, 2006) CSR is often managed by separate department disconnected from the core business and strategy (The Economist, 2016), and usually viewed as an additional cost, constraint or charity. In many companies CSR is taken as external pressure rather than tailored as unique strategy for positive brand building and competitive advantage. That is, many firms have taken CSR efforts as necessary costs to improve their reputation and to build brand insurance (Werther & Chandler, 2011, 104-106). Nevertheless, unheeded or hidden social and environmental harms can cause negative public responses and long-term effects on firm's success. In conclusion, CSR efforts have usually been isolated from firms operating units and strategy, while externally those have tried to respond to manifold pressures from various stakeholder groups, and have had variable social impact (Porter & Kramer, 2006).

While the general view of value is going through continuous development, it seems that many companies are trapped with narrow view of value proposition (Emerson, 2003; Porter & Kramer, 2011; Argawal et al., 2015; Argawal & Rahman, 2015). This outdated capitalist view has emphasized short-term financial performance and shareholders value creation, while undermined the needs of other stakeholder groups. The factors that determine firm's long-term success have been overlooked, such as the well-being of customers and society, saving natural resources or the success of key suppliers and co-operators. The failed or inefficient CSR efforts combined with too narrow sense of value have led to "vicious circle", where

untrusted businesses and restrictive political practices undermining competitiveness are slowing down economic growth. (Porter & Kramer, 2011)

At the same time, the general view of the value is constantly changing and evolving. For instance according to Argawal et al. (2015), “the concept of value has evolved over time, from utilitarian to perceived value, value for customer, value chain concept, relationship value, superior value and co-created value”. The value for customer is not only the exchange value received in the transaction, but the value in-use or experiences gained through the use of product or service (Argawal et al. 2015; Argawal & Rahman, 2015). According to Emerson (2003) the change in the opinions about value can be seen in the emergence of non-profit organizations and social purpose enterprises, strategy based social and environmental initiatives as well as investors seeking for investment portfolios with non-financial performance evaluation. In conclusion, the nature of value has shifted more to comprehensive value creation, where also the social and environmental objectives have an important role. CSV is a way for businesses to follow this path towards updated sustainable view of value.

2.2.3 Clarifying the concept of value

It is essential for businesses and decision-makers to clarify the concept of value and realize the meaning of *shared value* in order to better manage the conflicts between financial objectives and use of natural resources, assessment of social impacts and development of effective environmental management strategies. While the nature of value has changed over time, the neoclassical economic cost-benefit valuation methods do not give holistic picture anymore (Bebbington et al., 2007). By focusing only on economic offering and individual preferences, some important shared dimensions of value might get missed, such as multiple dimensions of human-wellbeing and complexity of ecosystems (Wegner & Pascual, 2011; Parks & Gowdy, 2013; Kenter et al., 2015) Value has typically been considered through individual valuations assuming that these valuations reflect society’s preferences and values, even though such valuation misses the shared and collective dimension of value (Klamer, 2003; Kenter et al., 2015). Moreover, value creation has conventionally been evaluated from customer-organization exchange perspective only, even though all social and economic stakeholders of organization can be seen as

resource integrators or building blocks in value experience creation (Prahalad & Ramaswamy, 2000; 2004; Gummeson, 2004; Vargo & Lusch, 2004; 2008; Edvarsson et al., 2011; Argawal et al., 2015).

In order to consider all dimensions of value, the individual and collective experiences within the inseparable social, environmental and economic perspectives need to be understood. Organizational culture, which builds on the participant's individual moral responsibility (Dempsey, 2015), has strong effect on value creation. On the other hand value is co-created and –defined by all stakeholders of organizations collectively. Even though valuation is conventionally based on transaction between customer and organization, customer's experience about value depends on much more complex function than offering-benefit exchange. For instance, ecologic choices can be considered fundamentally ethical and social, while society affects individual preferences and vice versa, environmental impacts of individual behavior affect society (Kenter et al., 2015).

Kenter et al. (2015) have studied shared and social values in ecosystems. To clarify these ambiguous concepts they divide value into five dimensions: *type, provider, elicitation process, intention and scale*. Firstly, value *type* refers to value concept, which can be further divided to *transcendental values, contextual values* and value indicators. Transcendental values are the guiding principles, i.e. the ethics according to which people select and justify their own and evaluate other people's actions (Schwartz, 1992, Kenter et al. 2015). Contextual values are the opinions of worth or importance and are dependent on the object. Value indicators measure the importance of something, expressed in commonly understood units in financial or non-financial terms. Secondly, value *provider* refers to whose values are under consideration. Value provider can be society, community, ad-hoc group or individual, which affects to the shared values of a group. Thus shared value provider in this context refers to groups with commonly expressed values. Thirdly, value *elicitation process* concerns the distinction between deliberated and non-deliberated values, while the valuation might take place in group setting but also within the process. Furthermore, *intention* of values refers to distinction between self-regarding and altruistic values. This means that one can evaluate things regarding one's own life enjoyment or on the other hand consider value regarding other people

or future generation. The dimension of value *scale* refers to individual versus social scale, while the values preferred for oneself might differ from the importance of values in relation to social scale. The *scale* differs from *intension* in the sense that other-regarding *intension* can also appear on the individual *scale*. (Kenter et al., 2015)

In addition to different dimensions of value, people have large set of types of shared and social values and preferences. Kenter et al. (2015) divide these sets or types to seven main categories, which each are associated with one of the dimensions: *Transcendental, Cultural and societal, Communal, Group, Deliberated, Other-regarding* and *Value to society. Transcendental* values refer to one type of value *concept* defined above, of what is one's desirable state or behavior. *Cultural and societal* values are associated with value *provider*. Cultural values refer to shared principles, values and meanings, cultural heritage and practices, while societal values are the cultural values of society, which may be more or less homogenous depending on how many and how harmonized different cultural values one society entails. *Communal and group* values both also refer to value *provider*, regarding values held and/or expressed by members of a community or group. *Deliberated* values refer to value process, in which a group has deliberatively ended up with some shared values possibly by discussion and learning. Social value type of value *intention* are *other-regarding* values, which as contextual values refer to importance of well-being of others and as transcendental values refer to the moral standing of others. *Value to society* means the benefit, worth or importance to society as whole and refers to the *scale* of value. (Kenter et al., 2015)

It is extremely important to get this kind of an in-depth understanding of the social and multidimensional nature of value, in order to analyze the whole potential of CSV and possible divergent opinions about evaluating it.

2.2.4 Social versus financial interest

Financial and social objectives have for long been evaluated separately and often seen against each other even in the literature of social businesses and social entrepreneurship. Instead of finding the natural middle, businesses have been expected to choose one side or the other (Emerson, 2003). In conventional

economic thinking, social objectives or actions, e.g. hiring a disabled person, inevitably creates costs and constraints to the firm. However, when firms create harm to society, i.e. so called external costs, and do not consider those as internal costs, society has to impose taxes, regulations and penalties as social costs to firms. On the other hand, even though society would not internalize these costs, the social harms would create internal costs to firm as wasted resources or raw materials, a costly accident or additional training of employees because of poor level of education. If the firm actually would address these harms by the means of its core business and strategy, it wouldn't necessarily raise additional costs in the long run, because of innovations, use of new technologies, operating methods or business models that may increase productivity and give competitive advantage. (Porter & Kramer, 2011) In non-profit organizations on the other hand, poor performance or prospects are often entitled by doing good, and same kind of financial or managerial disciplines are not required as in conventional businesses. A common assumption is that marginal returns and resource use are the best non-profits can do. The only goal is often social intent, rather than social impact, which is rarely traced or measured with any reliable criteria or indicators. (Emerson, 2003) In consequence, concepts like shared value or blended value have been studied in order to find the linkages between financial and social interests and the multidimensional nature of value.

Although the multidimensionality value thinking has been quite widely accepted, there remains debate about whether it should augment, complement or replace the conventional cost-benefit analysis as welfare assessment (Bebbington et al., 2007; Parks & Gowdy, 2011; Wegner & Pascual, 2013; Kenter et al. 2015). In addition to understanding of costs, the nature of returns is another important question. Behind the shared value thinking is the real maximization of *returns*. That is, societies need much more to function than the basis of their economic enterprises. And on the other hand, economic enterprises do not exist on their financials. The social commerce allows society (including individuals and organizations) to make its financial returns. Existing mores, laws and regulations, are determined socially, and these combined with financial imperatives enable the collective returns of society to be realized. Thus social dynamics give the ultimate value for the financial returns in the financial capital markets. While the financial, social and environmental forces are all present

in every activity and investment within the market, they are rather interdependent and contributing each other than inverse elements. Thus the ultimate value creation and returns can be achieved by maximizing the greatest potential of all these forces. This is not an easy task to do, while it raises many questions about the forms of returns and the set of shareholders and stakeholders, as well as the commensurability of all these elements in the context of value maximization. (Emerson, 2003)

The CSV thinking provides a more sophisticated form of capitalism (Porter & Kramer, 2011). The awareness of social issues as well as the growing scarcity of natural resources has increased among citizens and institutions. Thus the capital markets also need to get renewed and acknowledge these needs, in order to find the business opportunities from these new market factors. If capital markets continue the pressure for reaping short-term profits, regardless the social and environmental needs, much greater long-term business opportunities get easily missed. More sophisticated form of capitalism, which considers social and environmental needs too does not mean charity or more CSR initiatives, but an updated and deeper understanding of today's economy and competition among enterprises and investors. This means that businesses recognize their opportunities from their core business to meet the most crucial social and environmental needs, and create shared value by developing new business models, products and services.

According Porter and Kramer (2011) this represents a broader view of conception of Adam Smith's invisible hand. The ideal would be, that society would function, if all companies individually would address the shared needs connected to their core business. The governments could set supportive policies for businesses, legitimated to operate by their community. Market competition would still exist, but in the way that would benefit the society.

From the investors' point of view, they are usually divided to those who invest to do financially well and those who invest for good-will. Investments as well are separated to fully financial return oriented and to pure social market return oriented. Aggravatingly, there are two options for investors, either to make money or give it away. This dichotomy has emerged for several reasons. Firstly, in most cases,

socially or environmentally oriented organizations have regarded aspiring of financial profits undesirable. Moreover, their managers might have understood less the need for measuring and indicating the true social or environmental impact, than the intent of their organizations. (Emerson, 2003) As a cause and effect for this, the lack of common practices for measuring social impact or CSV has complicated the evaluation of the true impact as well as the financial profitability of these organizations. Furthermore, the capital market pressure for generating short-term financial profits, might weaken the position of socially oriented investments that often have financial impact rather in the long run (Porter & Kramer, 2011). Actually, if the investments would and could be evaluated more in CSV matter, the investors might need to concern less about the particular legal structure and corporate status of an organization than about its fundamental value creation (Emerson, 2003). This way, long-term profits could be more attractive also for the capital markets, when the whole potential of CSV would get evaluated.

2.2.5 How to create shared value?

CSV is a principle which creates economic value by simultaneously creating value to society by addressing its needs and challenges. It connects companies' core competencies and success with social and environmental goals, opening up new ways to serve society's needs, to gain efficiency in various areas and to achieve differentiation. The idea of CSV sounds almost too good to be true, and yet it has received much critique too. Porter & Kramer's (2011) CSV concept has been claimed unoriginal, pirated from earlier scholarships such as strategic CSR, social innovations, social entrepreneurship and stakeholder management (Paramanand, 2013; Crane et al., 2014; Corner & Pavlovich, 2016). However, the idea behind CSV actually is to go beyond compliance, corporate governance or CSR work, from ostensible change to real change (Kanter, 1999; Porter & Kramer, 2011). Another critique has claimed CSV as buzzword without empirical use, and that it remains reflected in profit-focused business as usual paradigm, ignoring tensions between social and economic preferences (Crane et al., 2014; Dembek & Singh; 2014; Corner & Pavlovich, 2016). Surely, CSV thinking supports the idea of businesses acting as business, not as non-profits for instance (Porter & Kramer, 2011). As such, it is not about sharing the value literally, not ignoring the inherent tensions, but

optimizing the total economic, social and environmental value. Thirdly, critique has occurred about CSV being naïve concept, not addressing the real extent of social issues and how those macro-level problems can be resolved at micro-level (Crane et al., 2014; Corner & Pavlovich, 2016). In fact, CSV thinking acknowledges this issue, thus claiming that all entities should drive the change through their core strategy, redefined value proposition, and stakeholders, simultaneously fostering the paradigm shift in macro-level. Potentially CSV might become just another CSR concept. Hence, to avoid affirming the critique about vagueness and emptiness of CSV concept, it is important to investigate *how* exactly shared value can be *created.*

Three key ways to create shared value can be found from the existing literature; society's needs, redefining value chains and stakeholder involvement. Firstly, society's needs give huge potential for variety of businesses. Those can be seen as opportunities to create new business ideas, to serve new markets and to solve long-standing issues. Just to name a few, health, nutrition, water, housing, financial security and environmental damages are the greatest trends of increasing unmet needs in the world. Businesses need to fundamentally change their products and markets, from trying to create demand to meet the greatest demand – the need. The basic question should be, what the customers need and which product or service will fulfil those needs. On the other hand, many shared value innovators have been those with most limited resources. (Kanter, 1999; Porter & Kramer, 2011) One good example of these products are frugal innovations that strive to minimize the use of material and financial resources and fulfill a certain quality for a product (Tiwari & Herstatt, 2012). Frugal innovations have increased their market rapidly especially among the 'bottom of the pyramid' in emerging countries. Lately, western corporations have also shown their interest towards these 'good-enough', affordable products, but apparently their organization and business models would need to change form creating demand to responding to real needs. (Zeschky et al, 2011)

Secondly, social issues and society's problems are not only affected by businesses but also have an effect on corporates' productivity. Hence companies should recognize their true agenda and core competencies, which can respond to specific social and society's needs (Kanter, 1999). In order to do so, companies should redefine their value chains and productivity. Social issues, such as use of natural

resources and water, health and safety and working conditions may create direct or indirect economic costs in the value chain. The other way around, efforts to improve for instance energy efficiency, logistical systems and education can yield net cost savings through better resource utilization, process efficiency and quality as well as employee productivity and simultaneously make positive change for environment and society. (Porter & Kramer, 2011)

Porter & Kramer (2011) have defined the needs for change throughout the value chain. At the procurement side, with supportive actions and co-operation (e.g. sharing technology, information etc.), businesses may gain lucrative supplier network. It goes without saying that suppliers cannot remain productive and sustainable or improve their quality, if they are continuously marginalized or even oppressed. Besides the supportive supplier networks, operating with local suppliers can create a productive and vital surrounding society for business. Additionally, redesigned, profitable distribution models can also dramatically reduce resource use. For instance, Philips has provided a lightning service with installation and maintenance instead of light products, which have not only provided new business opportunities but also enabled reuse of resources and reduce their costumers' waste.

Furthermore, rethinking of business location is needed. Previously it has been stated in business thinking that only the price of location matters in the time of improved information systems and global supply chains. However, Porter & Kramer (2011) stress that carbon emissions, energy and productivity costs of highly dispersed production as well as hidden costs of distant procurement weaken the real productivity of cheap locations. Additionally, multinational corporations are held responsible also for their global partners, suppliers and subcontractors (Soundararajan & Brown, 2016).The growing awareness and claims for transparency of social and environmental sustainability increase the brand and image risk of cheap and far distance locations, or at least the costs of assurance and control functions. Establishing deeper roots in important local communities has often proved to be a factor of strong and successful companies (Porter & Kramer, 2011). In conclusion, rethinking the business location and governing collaborative supply chains in shared value means can yield many success factors for the

company (Porter & Kramer, 2011; Soundarajan & Brown, 2016). To name a few, a localized company can respond for instance to fairly topical tax evasion claims by adding trust and transparency. It gives opportunity to create deeper networks with suppliers, partners, customers, society and all stakeholders, and that way might gain organizational development and successful innovations, respect and influential power.

Finally, stakeholder involvement, co-operation and communication are very popular in CSV literature. Co-creation of common value by various stakeholders has potential for great social impact (Argawal et al., 2015). That regarding, Porter & Kramer (2011) emphasize the potential of local cluster development in CSV. In today's world successful companies focus on their core competencies. Thus the vitality of surrounding companies and infrastructure is getting more and more important. In fact, the success of one's business model depends greatly on how it interacts with surrounding business models (Casadesus-Masanell & Ricart, 2011). By collaboration throughout the value chain, companies can result greater logistical and resource efficiency, level of knowledge, research and development as well as waste and transportation cost reductions. In best scenario clusters can drive productivity, innovations and competitiveness of local businesses and economy. Cluster development and specification of partnerships might require more resources and longer time, while companies must rethink their logistics, suppliers, distribution channels and business models. Nevertheless, well established relationship between partners tend to last longer and stronger, securing their economic benefits, whereas local clusters can foster positive circle of job creation, wealth creation, new businesses and further infrastructure development. (Porter & Kramer, 2011; Witjes & Lozano, 2015) Clusters are actually very close to the CE thinking while they give variety of opportunities for resource and logistical efficiency, by functioning network of companies and surrounding community.

Collaboration is important for CSV and sometimes even necessary. Some CSV opportunities are not achievable without co-operation over private/public or for-profit/non-profit boundaries, or with competitors. (Kanter, 1999; Porter &Kramer, 2011; Argawal et al., 2015) However, shared value creation in co-operation between different sectors might potentially increase complexity. The public and private, for-

profit and non-profit sector organizations are driven by different goals and the institutional infrastructure in public organizations might be less developed than in market-driven business (Kanter, 1999). These kind of contrasts might also be confronted in business-to-business co-operation, while corporations have to go beyond their conventional business and profitability models in order to solve common social issues.

There are several tips to overcome the challenges of co-operation. Firstly, with *a clear agenda* partners can recognize how to make a social difference by taking advantage of their core capabilities. Secondly, *long-term commitment* is needed from all partners, at all hierarchical levels, to give strong support for systemic and sustainable change. As such, collaboration should be linked to clearly defined outcomes and connected to goals of all stakeholders, in order to motivate and easily be tracked by all partners. (Kanter, 1999; Porter & Kramer, 2011) Thirdly, common *risk* bearing by all parties brings commitment and mutuality, while all parties put their resources on the line. This not only means monetary investments, but also providing *accessibility* to important resources and knowledge. Forthly, *dialogue and transparency* foster rootedness to the user community as well as links to other organizations. Creating a network with diversity of key players (even the worst competitors), enables the access to various knowledge, input and markets. (Kanter, 1999; Prahalad & Ramaswamy, 2004) Co-operation should be data-driven (Porter & Kramer, 2011), despite the competitive relation to partner. Furthermore, dialogue and transparency with users is essential to get the most reliable feedback for innovations and further development. (Kanter, 1999; Prahalad & Ramaswamy, 2004). Best ways to respond to social needs is to listen to those who have the needs. Engaging stakeholders in value creation can lead to innovative solutions, personalized and customized products and services, and even disruptive innovation (Argawal et al., 2015).

Moreover, communication is essential in stakeholder involvement. Integration and good relationships with stakeholders are keys to CSV. Clearly, it is important to include stakeholders into decision-making processes and development projects in order to mitigate the risk for misunderstandings and conflicts. But involvement and dialogue also add value through input of different perspectives of an issue. In order

to create shared value, the value has to be understood in the organization according to the shared understanding of value in the society. Thus collaboration between different stakeholders can greatly impact society. (Argawal et al., 2015; Kenter et al., 2015) As a matter of fact, CSV concept can be seen as a paradigm shift, which requires evolution in consciousness and “inner knowledge creation” of all individuals (Pavlovich & Corner, 2014; Corner & Pavlovich, 2016). Expanded consciousness can accelerate this process, where CSV becomes the focus of business. Hence, entrepreneurs and managers should practice this kind of consciousness among the whole organization. Much as the products and services are provided in the means of shared value, they are not marketable if the market is not ready. By communicating and spreading their consciousness to stakeholders, organizations can create a positive circle towards the paradigm shift to CSV.

One could claim that CSV is simply new and fresh form of CSR. Moving towards CSV for only favorable reputation and brand insurance purposes would be too risky for business, because of all the effort and resources the transformation requires. There are much greater and wider reaching possibilities with CSV, if it is implemented properly.

2.3 Performance measurement and reporting of CSV

Regardless of the evidence that businesses have steadily increased the volume of CSR reporting, there remains suspicion that for many corporate responsibility reporting remains *“*a mask behind which business as usual continues*”* (Gray, 2006; Murray et al. 2015). The actions behind these reports have not usually been neither strategic nor operational, but cosmetic, imposed from external pressure (Porter & Kramer, 2006). However the current reporting practices cannot sustain for a long time, while demand for CSV reporting increases all the time for all organizations and sectors, regardless of their legal or organizational structure (Emerson, 2003; Barraket & Yousefpour, 2013). Various external stakeholders have started to require transparency, comparability and legitimacy for organization’s performance measurement (Arvidson et al. 2010; Syrjä & Sjögren, 2015). On the other hand, relevant information is needed for internal purposes, for rational and strategic decision making (Haigh & Hoffman, 2012), as well as to link the social efforts to

corporate success (Barraket & Yousefpour, 2013). New metrics and fundamentally new value proposition are needed, which requires new framework and tools to track performance.

2.3.1 Why and what to measure?

Traditionally, social sector organizations have focused on good intention rather than assessing social impact, by claims that social value creation is not measurable. There has been a common understanding, that social organizations performance cannot be evaluated with numeric and quantitative approaches. On the other hand for-profit organizations have focused on financial accounting and performance measurement, disable to recognize the social value creation's conversion to corporate's economic success. (Emerson, 2003) This dichotomy has prevented organizations to see the much greater possibility to achieve multidimensional value creation. The much wider array of value creation potential should be recognized, including those that are easy to quantify as well as those that are considered as non-measurable (Emerson, 2003).

The conventional financial performance measurement doesn't take into account the transformative and interconnected nature of socio-economic market. In order to move towards CSV, the measurement and reporting of corporate performance should move beyond the belief of separate social, environmental and economic value. Unlike conventional businesses maximizing economic profits, CSV requires maximizing economic, social and environmental value simultaneously. Only when all these functions are integrated and fully assessed, the shared value can be optimized and maximized. (Emerson, 2003) In fact, assessment of sustainability in management accounting should not be that difficult, considering other non-financial factors of long-run success and competitive position, such as customer satisfaction (Epstein & Wisner, 2001; Porter, 1985; 1990; 2006). Furthermore, shared value measures and evaluation methods cannot be developed by simply adding environmental or social elements to existing financial measurements, but by assessing and linking economic objectives with social and environmental objectives. (Emerson, 2003; Dart, 2004; Nicholls, 2009)

Common question to various social impact assessment is the concept of accountability. Accountability is a quite loose concept, with various definitions. The broad definition or purpose of accountability is to make organization accountable or liable for the social, environmental and economic consequences of their actions (Gray, 2002; Unerman & O'Dwyer, 2006). The narrower view instead sees the concept as "a relationship between actor and a forum" (Bovens, 2007), where the actors behavior should be legitimated by explaining the reasons of actions or omissions (Messner, 2009). Being used to qualify the performance of an organization, it can be seen as concept of evaluation rather than analysis or measurement. Accountability is very close and often paralleled with responsiveness and the image of transparency and trustworthiness. (Bovens, 2007) There lies a difficulty to determine whether an organization is accountable or not, while there are no standards for accountable behavior (Bovens, 2007), thus the qualification of accountability depends on the actor and the forum.

Another keystone of social impact literature has been the question of whether it can be quantified and measured. According to Nicholls (2009), there is firstly a question of what should be measured and reported and secondly, how to measure what is to be reported. Furthermore, the relationship between complex input factors and the variety of social impact can be challenging to define and measure (Kendall & Knapp, 2000; Barman, 2007; Nicholls, 2009). In spite of this, the measurement of social impact is not impossible. It can be even thought to be more challenging than it actually is, because of the predominant qualitative approaches and comparatively new demand and exploring of such metrics (Luke, 2013; Syrjä & Sjögrén, 2016). One approach is commensuration, i.e. transforming qualitative, 'spoken' data into quantitative metrics, i.e. narrative numeracy (Emerson, 2003). Commensurability can advance the capability of expressing the subjective experiences and contextual elements of complex world into comparable data with e.g. financial data, thus reducing disconnected information and enabling more extensive evaluation of corporate performance (Espeland & Hirch, 1990; Gephart, 1997; Emerson, 2003; Syrjä & Sjögren, 2015).

There is a range of tools for social impact assessment and measurement, which all have common features by including tools to track performance, suggesting

methodological guidelines and process steps for evaluation. Approaches vary by data, applications and techniques gathered and used. (Volkmann et al. (Eds.), 2012) Each approach has its strengths and weaknesses. Furthermore three purpose categories of performance measurement can be found. Firstly, approaches such as Social Return on Investment (SROI) focus on internal tracking of performance to support decision making and operations. Secondly, SROI among balanced scorecard and SIMPLE (social impact for local economy) can be used to external social value creation and impact measurement. Finally, measures such as SROI can also be used by investors, who seek other value creation (social or environmental) for their investment in addition to financial return. (Chmelik et al. 2016; Syrjä & Sjögrén, 2016) In this section the measures mentioned above will be introduced and evaluated regarding the CSV in CE model. At first however, some critique and challenges of social impact measurement from existing literature will be discussed, in order to critically evaluate the appointed measures.

2.3.2 Critique and challenges of social impact assessment

Generally, several suggestions for and challenges of changing of accounting systems have been provided (e.g. Cobb et al., 1995, Burns & Vaivio, 2001; Kasurinen, 2002). According to Kasurinen (2002) the barriers of accounting change can be divided into three categories; *confusers* (e.g. different views of change), *frustrators* (e.g. existing reporting systems) and *delayers* (e.g. inadequate information systems). These challenges can be seen also in the change of performance measurement practices towards sustainability. While environmental impact measurement has set up in organization's performance measurement and reporting at some level, social impact assessment is still quite rare, even though the favor of social organizations has increased rapidly. Social organizations have legitimized their existence by the intent or input of their operations rather than by the output and impact measurement (Zappalà & Lyons, 2009). As a cause and effect, social impact measurement has been stated difficult or even impossible. Furthermore the metrics and information infrastructure for social impact measurement has not evolved as they should have. In addition to real challenges in measurement of social impact and performance of triple bottom line, the existinig

metrics have been criticized (by e.g. Emerson, 2003; Chatterji & Levine, 2006; Porter & Kramer, 2006).

As explained above, social impact assessment comes with many challenging questions about what should be measured and reported, what is the accountability of organization and how to make complex qualitative data commensurable. According to Carrol (1979) business ethics is an abstract and hard to define concept, while it goes beyond the legal requirements and there is no consistent opinion of what is ethical and what is not. Measuring organizations social impact and sustainable performance still has many challenges, and hence there remains great variations of how each company measures and reports their impact and initiatives (Zappalà & Lyons, 2009). Even with standardized measurement tools and reporting, the use of measurement is always subjective and it is quite easy to ignore at least the indirect negative social impacts of business (Syrjä & Sjögren, 2015). Furthermore, measuring CSV emerges in uncertainty and continual change, as stakeholders attempt to require their own goals and agendas. As new standards of qualification are imposed, progress and performance needs to be measured against changing metrics of transformative and interlinked economic, environmental and social value creation. In conclusion, putting this into theory and practice is not an easy task (Emerson, 2003), but still social impact is not impossible to measure.

One major challenge of social impact assessment is limited resources of an organization. Small sized enterprises have especially been noticed about their critical characteristics of performance measurement (Mitchel & Reid, 2000; Hudson et al. 2001), but also larger organizations face challenges in responsibility and sustainability reporting. Especially globally well-known organizations have multiple pressures to prove their accountability, and hence they have to use resources to fill endless forms of various standards. Additionally, while there are no generally accepted social impact reporting standards (or the existing ones are quite loose), it is difficult for organizations to define, which of the standards or codes of compliance are the most valid to qualify true social responsibility. (Chatterji & Levine, 2006) The resource challenges fall upon both financial and human resources (Thomas, 2004), while organizations have to pay for the audits of compliance plus the working hours used for reporting and measuring multiple social responsibility assessments. Those

working hours are competing with other task commitments, which might be seen as operationally or strategically more essential in an organization. In the end, inefficient and complex performance measurement and reporting practices might become costly to the consumer, who cares about the social and environmental accountability of a product. (Chatterji & Levine, 2006; Millar & Hall, 2013; Syrjä & Sjögrén, 2016)

Furthermore the resource challenges might occur in lack of access to suitable data for measurement performance or simply in lack of knowledge of how to measure social impact, especially in small organizations. There are various sources of data and tools for social assessment available, but without certain level of knowledge it might be hard to find the most suitable ones for one's organization. In addition, if there are no executive policies addressing social and environmental impact of organizations, the relevance and comparability of information provided by organizations might vary a lot. (Chatterji & Levine, 2006; Andersen, 2007, Syrjä & Sjögrén, 2016) Moreover there is a question of suitable time frame for measurement of social impact (Emerson, 2003). This might be very challenging, while the impact can reach far, both geographically and in the course of time, as well as both intendedly and unintendedly. In conclusion, social impact and performance assessment should be supported by organizational culture, carefully defined, planned, implemented and traced, and it should not be neither too complex or limited (Porter & Kramer, 2011; Volkmann et al. (Eds.), 2012; Barraket & Yousefpour, 2013). Unfortunately the full benefits and potential of proper social impact assessment are usually not recognized, and those are commonly seen as additional resource burden from external pressure rather than a performance measurement supporting strategic management decision making (Bull, 2007; Millar & Hall, 2013)

The triple bottom line in CSV also creates challenges to performance measurement compared to conventional businesses with financial profit objectives only. On the other hand, compared to social purpose organizations or non-profit organizations, CSV needs managerial skills of sustainability to cover all dimensions and their interdependences (Emerson, 2003). This is not an easy task, because tensions between social, environmental and economic objectives cannot be ignored or tackled completely (Tracey & Phillips, 2007; Millar & Hall, 2013; Crane et al. 2014). Additionally, the inseparability and interlinkages of the three pillars of sustainability

set challenges and complexity to performance measurement. In the same way in sustainable product or development, commerciality and competitiveness have to meet the social and environmental sustainability requirements. Thus organizational priorities and strategies of how to maximize CSV need to be carefully determined. Accordingly, CSV, accountability or sustainability cannot be measured simply by complementing existing financial measures with environmental or social impact assessment. Even though these additional measures could impose risk, improved stakeholder management or business ethics, and therefore some marginal improvement towards sustainability, this approach cannot reach the level of real CSV. An integrated substantially new evaluation system of sustainability is needed, to assess joint financial, social and environmental impact, and to provide information of any organization, investment opportunity or community and to be understandable by any stakeholder. Eventually this kind of new valuation system has a full potential to result conventional shareholder value too. (Emerson, 2003; Gray, 2006)

Measuring and reporting of social impact should be implemented with consistent ranking and accurately reflect company's social impact. However several critiques of existing measurement practices and ratings have been stated. Firstly criterion used for social impact rankings varies widely. As noted above lack of common cultural currency to compare organizations' sustainability decreases the relevance of existing sustainability reports and performance evaluations. (Emerson, 2003; Porter, 2006) How much one unit of a social output is hard to define, while "we know the worth of all things and the value of nothing*",* i.e. we know the input worth of a product or a service, but the broader meaning of impact and value creation remains vague (Emerson, 2003). Secondly the information resources and auditing of social or environmental impact are still inadequate. More substantial data sets for measurement, such as self-contained reports and national social data are needed rather than organizations' self-serving annual sustainability disclosures. Otherwise it is hard to judge whether the criteria of CSV has been really met. Engagement of organizations needs to be challenged and more imaginative and extensive accounting practices are needed. (Chatterji & Levine, 2006; Porter & Kramer, 2006; Gray, 2006) Finally the data gathered to existing information systems seems to be unreliable for two reasons. Many inquiries' response rates are statistically

insignificant, or the responses from the target companies are self-reported and not been verified externally. (Chatterji & Levine, 2006; Porter & Kramer, 2006)

2.3.3 Existing practices for CSV performance measurement

Balanced scorecard

Balanced scorecard (BSC) introduced by Kaplan & Norton (1992) is a strategic management tool which aims to help organizations in defining and keeping track on, what really drives their organizational success (Kaplan & Norton, 1996). The BSC helps organizations to monitor how they are creating future value (Kaplan, 1994) by balancing financial and non-financial, short- and long-term, qualitative and quantitative measures (Kaplan & Norton, 1996; Syrjä & Sjögrén, 2016). However, BSC has been created to complement for financial measurement rather than replace them (Kaplan & Norton, 1992). It is a planning, implementation as well as tracking tool for operationalizing organizations vision and strategy into practice (Kaplan & Norton, 1994). There are four perspectives in the original model of BSC; financial, customer, internal business process as well as learning and growth, which together permit balanced short-term and long-term as well as hard value and softer value objectives (Kaplan & Norton, 1992; 1996).

According to Jensen (2001) BSC approach is flawed though, because it gives managers no real score whatsoever. Even though the scorecard can include plenty of measures, it provides no information on the tradeoffs between them, nor a single-valued measure of performance (Jensen, 2001). Admittedly Jensen has a good point here, but on the other hand a well-managed BSC could provide a complementary and comprehensive view of organizational performance, measurement and strategy implementation (Kasurinen, 2002; Syrjä & Sjögrén, 2016). It is very important to organization to have a whole picture of its strategy implementation and also keep up with the changes in the surrounding environment (Atkinson, 2006). Another weakness could be found from BSC framework, that it is based on organizations subjective perspectives, reviews and evaluations, and hence it can be seen more a strategy and management tool rather than a suitable tool for any performance measurement. According to Clark et al. (2004) BSC has a risk of lacking credibility, if inputs selected do not reflect the impact or performance,

or if there is weak correlation between the outputs of BSC and true impact, or if those outputs are misinterpreted as impacts. However, as Kanter (1999) and Porter & Kramer (2011) have stated, it is essential for organization to find its core business agenda and map the opportunities for CSV. Furthermore, organizational goals should be carefully determined as well as the process to achieve these goals should be reviewed and traced according to well pre-defined criteria (Kanter, 1999; Porter & Kramer, 2011). BSC allows each unique organization to define the most critical strategic priorities and values and to turn them into measurable performance objectives (Mooraj, 1999; Assiri et al, 2006) Thus BSC could be very suitable management tool for CSV.

In existing literature, BSC has been extended to address sustainable strategies as well (by e.g. Epstein & Wisner, 2001; Länsiluoto & Järvenpää, 2008; 2010; Hansen & Scalttegger, 2016). By enabling to contemplate the softer values and non-financial measurements together with harder values and financial objectives in one scorecard, BSC gives possibility to manage and integrate all three dimensions of sustainability within one system (Hansen & Schaltegger, 2016; Syrjä & Sjögrén, 2016). However, integrating sustainability aspect to BSC cannot be done by simply adding a fifth perspective to the traditional or existing scorecard, but the effect of all three sustainability dimensions need to be illustrated on every four perspectives (Länsiluoto & Järvenpää, 2010). Additionally, some adjustments or updates to the original perspectives might be required, such as extending customers' aspect to concern all stakeholder perspectives.

By integrating economic, social and environmental aspects into one strategic model instead of adding new parallel measurements of each dimension separately (Hansen & Schaltegger, 2016), BSC approach can effectively support CSV. Additionally, BSC approach emphasizes the long-term value creation simultaneously with short-term performance, finding the core competencies and sources of competitive advantage, as well as implementing the strategy to all organizational levels. According to Atkinson (2006) half of the strategies introduced by organizations are never implemented. Similarly many sustainability or corporate responsibility objectives are never implemented on strategic level. Idealistically,

BSC could help management to say what organization does as well as “do what they say” (Burns & Vaivio, 2001; Kasurinen, 2002).

SROI

The Social return on investment (SROI) framework, contributed by a number of researchers and organizations, starting from Jed Emerson (1999; 2003) and Roberts Enterprise Development Fund, has been developed to bring quantitative perspective and performance evaluation to capture the full economic, social and environmental value creation (Nicholls, 2009; Nicholls et al., 2012; Millar & Hall, 2013). SROI is one of the most popular tool for assessing social impact, and it has many sub-approaches, such as SROI Lite, SROI Calculator and SROI Toolkit (Olsen et al., 2008). SROI framework is based on traditional accounting principles, more precisely on cost-benefit analysis, originating from purely financial return on investment ROI analysis. The basic idea is the same: to establish a ratio of the net benefits compared to the investment cost to achieve those benefits (Rotheroe & Richards, 2007; Nicholls, 2009; Luke et al., 2013; Krlev et al., 2013). However, SROI differs from cost-benefit investment analysis in two ways. Firstly it is a practical management tool enabling regular informed decision making, whereas traditional ROI is often used for case to case analysis, comparatively or retrospectively. Secondly, SROI analysis considers both social and financial (and environmental) benefits by planning and optimizing each input and output, whereas cost-benefit analysis is usually based on direct cost-gain trade-offs. (Lingane & Olsen, 2004; Rotheroe & Richards, 2007)

SROI assesses at least three types of returns. In addition to social and economic return, the third return is a combination of these two. (Nicholls, 2009; Krlev et al., 2013) Social returns can create added value to economic returns and the other way around, as this relation is explained in the shared value theory above. Furthermore, also environmental benefits can be included to SROI analysis, which adds a forth type of return to the framework. Thus well-managed SROI demonstrates many qualities to sustainability, including stakeholder management, impact value chain mapping as well as input-outcome analysis (Rotheroe & Richards, 2007, Mook et al, 2015). Other benefits of SROI are found from organizational learning during the process and making social outcomes visible (Mook et al., 2015). Combining

quantitative and qualitative analysis and stakeholder inclusion at every stage of analysis, it increases transparent accountability (Roheroe & Richards, 2007, Krlev, 2013; Millar & Hall, 2013).

Nevertheless, also SROI has confronted some challenges of social impact evaluation stressed previously in this section. Firstly, social or environmental effects are in many cases not possible to quantify in a relevant way (Nicholls, 2009; Krlev et al., 2013; Mook et al., 2015). Not all social impacts can be measured in monetary terms and on the other hand, some social benefits are only realized in the far future or totally in another context. This might quite easily lead to underestimation of the full social value (Rotheroe & Richards, 2007). Additionally, comparability of SROI between different organizations might occur flawed. The subjective approaches to quantify and monetize social or environmental outcomes might vary a lot between organizations (Nicholls, 2009; Zappalá & Lyons, 2009), because of lacking common narrative numeracy for those effects (Emerson, 2003; Chatterji & Levine, 2006). Furthermore, SROI approach in not suitable for all types of organization. For instance for small organizations, SROI might require too heavy and costly implementation process. SROI might be more useful in businesses, whose social and environmental impacts are obscure or the financial value of those is not straightforward. The usefulness and relevance of SROI depends much on the type and mission of the business. (Mook et al., 2015; Syrjä & Sjögén, 2016)

Taken into account these challenges and the economic emphasis of the framework, SROI could be used also for measurement of CSV. At least for organization's internal purposes as performance measurement and planning tool for CSV SROI can be useful. If the infrastructure for social impact assessment was developed towards commensurability and common cultural currency, the comparability of SROI would improve, and it might become a powerful tool also for external reporting.

Logic Models

Logic models or logic approaches has developed starting from 1970s to address the barriers of social impact evaluations, as many of them have emphasized the outputs in the end of the program rather than the value chain outcomes. Although many versions of logic models exist, they all provide framework in which the performance

assessment of the whole life cycle process is evaluated. They all share a systemic approach to determine and understand the causal relationship and/or linkages of the resources or inputs, the strategies and activities planned and the desired outcomes or impact. (Zappalá & Lyons, 2009; Volkmann et al. (Eds.), 2012)

Impact value chain is a model originally developed by Clark et al. (2004) for social enterprises to categorize the different stages, methods and degrees of social impact and value creation. The basic idea of impact value chain approach is, that before assessing impact, organization must determine its objectives as well as define its complex interventions, activities and resources of how those objectives can be achieved and tracked. Furthermore Impact value chain approach distinguishes the difference between outputs (i.e. the results directly assessable by management) the social outcomes (i.e. the ultimate desired changes) and social impacts (which are outcomes that are only resulted from organizations activities). More precisely, outputs are the products or services resulted from the activities and inputs of organization, and are relevant to achieving the outcomes, whereas outcomes are the instant results or changes to social systems. Outcomes are necessary to achieve desired impact that is the outcomes minus “what would have happened anyway”. Furthermore, the impact value chain process also includes goal alignment, meaning that management should evaluate whether the outcomes or impacts have met the goals set, and what could be then improved in the process. In order to evaluate the impact coherently, determining of leading indicators or metrics, i.e. proxies is important. Data is captured both from the ongoing process (input and activities) and the results (short- and long-term). Finally the outcomes should indicate both intended/unintended and direct/indirect effects of the organization activities. Depending on indicators chosen, the impact of organization should be distinguished from the other external factors that may have caused the change. (Clark et al., 2004; Volkmann et al. (Eds.), 2012)

Another approach of logic impact model is SIMPLE introduced by McLoughlin et al. in 2009 also for social enterprises purposes. SIMPLE refers to social impact for local economy, and is developed for conceptual and practical use as robust and coherent methodology for social impact measurement. The SIMPLE is based on five step process to provide a holistic framework for managers, called *scope it* (to help define

the impact or issue), *map it* (to determine and prioritize the social impacts*), track it* (to choose and develop relevant impact measures), *tell it* (i.e. report the impacts) and finally *embed it* (to align the results with daily managerial decision-making). More precisely, the first stage is essential to scope the main impact drivers, i.e. the mission, external, internal and stakeholder aspects. All the stages depend on the priorities, purpose, resources and capabilities of the organization. The major benefits of SIMPLE has been found from educative effect of impact measurement, clarifying the complex diversity of measurement tools and supporting management purposes, such as planning processes. Additionally, it emphasizes the robust and full integration of all stages of impact assessment as well as financial, economic and social aspects. However, similarly to BSC or Impact value chain, SIMPLE can be seen more like a framework for impact assessment rather than performance measurement tool. Thus other measurement tools such as SROI can be easily included to the SIMPLE process or on the contrary, other measurements can be applied following the SIMPLE process. (McLoughlin et al., 2009; Syrjä & Sjögrén, 2016)

Logic models provide coherent and holistic frameworks for impact measurement, and have potential to increase the managerial and/or organizational understanding of impact assessment. Nevertheless, some challenges and risks come with logic models as well. Clark et al. (2004) found four major risks from adopting impact value chain, which all depend on the adopter of model. Firstly the specification impact value chain or scope might be either too loose or too narrow-minded. Secondly, the key relationships or links within the model might be hard to define, and therefore flawed. Thirdly there is a risk of weak analytical testing of those links, or fourthly the lacking evidence of results might complicate the impact evaluation. In addition, these models still lack tools for measuring unintended, unexpected or indirect consequences, although Impact value chain emphasizes the distinction between organizational and external factors for change. The difficulty of measuring social impact sustainability in the complex context remains with every approach, although those give important input for conceptualizing, clarifying and consistency of impact assessment. After all, whether the measurement tools and process represent and generate true impact depends on the organization, planning and implementation.

To sum up, there is enormous diversity of different performance measurement tools and approaches for impact assessment, though this variety also expresses the complexity of the underlying issue. Most of the tools are originally designed for social enterprises, but those are easily applicable for commercial businesses too. As a matter of fact, commercial businesses would have a lot to learn from social enterprises and the other way around. The idea behind CSV is not to distinguish organizations according to their legal form, but creating and maximizing the integrated economic, social and environmental value. As long as one objective cannot be entirely fulfilled without considering the other, all aspects should be equally measured and reported regardless of the form of organization (Syrjä & Sjögén, 2016). However, the suitability of a measurement tool depends on the type of business. According to Clark et al. (2004) the usefulness of a method for different impact assessment and mapping problems depends on two main factors, feasibility and credibility. Feasibility is the question of to which extent measurement tools are useful and applicable for an organization in exacting environment. Measurement tools vary in the resources needed, whereas they are developed for internal or external purposes as well as to which stakeholder groups they are the most credible (Syrjä & Sjögrén, 2016). Thus credibility is the question of to which extent the approach provides measures and results that are credible to relevant stakeholders. Finally, it should be recognized that measurement of CSV is not an end in itself. CSV and embedding it into organization strategy and culture are most important, and measurement it is the secondary question (Syrjä & Sjögrén, 2016). Transparency is a cost-efficient and powerful way of making CSV visible, even though well-managed performance measurement can further drive organizational success. Furthermore, performance measurement tools and impact assessment approaches have an important role in planning and shaping thinking models that is, a big step towards CSV.

3 CIRCULAR ECONOMY MODEL

Think about spaceship taking a long journey having only one source of energy – solar energy and a limited resource stock, which is used by the human in the spaceship. As the stock is reduced, the lives of the spaceship are expected to also reduce, unless they can find ways to recycle water and other resources needed to stay alive. Think about the Earth as this kind of spaceship to see the point of circular economy. The economy's purpose is to create utility according to classical economic paradigm, but a closed system sets limits to how long that utility can be sustained, unless it is organized in circular system. (Boulding, 1966 via Pearce & Turner, 1990)

3.1 The concept of circular economy

The origins of the Circular Economy (CE) concept are unclear, while the idea of the CE and closed-loop systems has been debated for a long time and in various contexts (Murray et al., 2015). Many studies refer to Kenneth Boulding´s (1966) above as the first idea for closed-loop economy – a term first used by Stahel and Reday-Mulvey in 1976 (Murray et al., 2015). However the trailblazing introduction of CE has been made in *Economics of Natural Resources and the Environment* by Pearce & Turner in 1990. The CE concept has strong linkages to the concept of eco-industrial development and industrial ecology. The main idea of eco-industrial development is, that the healthy economy and environment can coexist by material symbiosis between different organizations and production processes, by recycling residual waste materials and components, by developing complex interconnections, as well as by resource-use minimization and adoption of cleaner technologies. (Andersen, 2007; Geng & Doberstein, 2008) A true CE is a way to integrate sustainability management to the system of economy, value, production and consumption in order to achieve environmental, economic and social development goals (Chertow, 2000; Geng & Doberstein 2008; Murray et al., 2015; Hobson & Lynch, 2016). The word circular comes from to the concept of cycle, which has to important dimensions in CE: biogeochemical cycles - of which almost all have been effected by human activities - and recycling of products and materials – by the means of reducing resource use and waste (Murray et al., 2015). Additionally, CE uses concepts rooted from many different schools, such as biomimicry, cradle-to-

cradle and shared economy (Singh & Ordonez, 2015; Murray et al., 2015; Hobson & Lynch, 2016)

The traditional “sell more, sell faster” approach cannot be sustained in a long run. Thus CE model provides an economic strategy that challenges the traditional linear business and consumption system, by proposing successful and innovative business models and design to create value in a circular manner. Value is created by more sustainable products and design, minimization of resource use and financially sustainable business model. (Stahel, 2012; Delft University, 2014; Singh & Ordonez, 2015) In conventional linear model, product innovation and design doesn’t consider much about the end of product’s life cycle. CE model thinking requires considering the whole life cycle of product and even beyond that. By a well-demonstrative definition of Ellen MacArthur Foundation (2013a) CE is “an industrial economy that is restorative or regenerative by intention and design” (Lieder & Rashid, 2015).

CE is usually introduced with three fundamental principles, 3Rs: reducing, reusing and recycling. First, the economic objectives should be achieved by *minimizing* the use of raw materials, water and energy as well as by cutting emissions and waste of the whole system. From consumer point of view this objective encourages more modest and sustainable way of consumption. Second, the product should be such that its value sustains after multiple times of use, and could be valuable after *recycling* the product to second hand user too. Additionally, the components or materials should be easily removed for further recycle and reuse for secondary products. Third, the first objective can be more effectively achieved by *reusing* the raw materials and components after their initial consumption rather than letting them become toxic waste, or e.g. by burning them as energy source, although they would still have higher value potential elsewhere. One industry’s waste or by-products can be another’s valuable resource or material. (Yuan & Moriguichi, 2006; Zhijun & Nailing, 2007; Su et al (2012); Ellen MacArthur Foundation, 2015) Moreover, stressing that CE is understood as waste management rather than sustainable economic pattern, Hu et al., (2011) introduce a fourth R – Recover as a strategy for resource, nutrition and material recovery in the reuse of wastes. Furthermore they remind that the 4Rs are parallel processes in practice.

However, while those three principles simplify the basic idea of CE, the concept has much more to offer. The product and process design has huge relevance for the result of how sustainable and profitable the product/material life cycle actually becomes. Additionally there are certain objectives that should be considered, when planning and implementing circular business model. Firstly product itself should be designed so that timelessness, durability and maintenance possibilities are emphasized and product components are easy to remove and recycle. Secondly, the product design should be elevated to processes and system level, so that cycling would be enabled in different stages of product life cycle. In order to build and promote industrial symbiosis clusters, potential linkages between relevant industries and businesses should be identified. Furthermore, relationships with all relevant stakeholders should be explored and created, in order to understand the whole life cycle of the product, including the end-customer's experiences. Additionally, political and regulative settings related to product life cycle need to be defined, in order to promote appropriate policies for circular business development. Thirdly, circular product design requires considering, developing and emitting new business models and distribution practices. The traditional model concentrating on product ownership might not be the most suitable concept in all cases. Shared economy and Service economy concepts are playing an important role circular business models. In addition emitting new technologies, especially clean-tech is essential as well as promoting investments in research and development of cleaner technologies. Finally, performance measurement, accounting and reporting practices need transform towards sustainability, in order to assess the entire value potential of circular business. By using quantitative measures of social, environmental and economic performance separately (see Lu et al., 2003; Li et al., 2004) as well as blended accounting approaches, the performance and eco-efficiency of circular business can be traced and developed as well as reported to relevant stakeholders. (Geng & Doberstein, 2008; Delft University; 2014)

This chapter has its focus on the opportunities and challenges of implementing circular model in business. As Andersen (2007) points out, although the fundamental benefits of CE, such as waste reduction and resource efficiency are obvious, the subsequent benefits gradually become more and more difficult to achieve – a CE cannot promote recycling in perpetuity. Furthermore there are some

challenges and barriers to overcome in implementing circularity as well as with the concept of CE. Especially concerns about ignoring the social pillar of sustainability have been stressed. On the other hand CE model provides many other direct and indirect opportunities, than those most obvious ones. The least considered social aspects will be emphasized in the following opportunities and challenges of CE.

3.2 Opportunities of circular economy

The benefits of CE can be obtained to society and economy as a whole, by the minimization of waste to environment, by resource-efficiency, as well as by new models of making business. Reducing waste is not actually the main point of CE, but to reduce the use of virgin materials and retain and recreate their value as long as possible and for multiple product life cycles (Andersen, 2007). This way the value added will be provided multiple times from single amount of raw material (Pantsar & Herlevi, 2016). However, the greatest potential is not utilizing the used material and waste flows. More valuable are CE solutions, like the maintenance services, reuse and reproduction of devices and other products, CE product design, R&D and innovations. Those are needed at every stage of society: social, technological and economic. The starting point should be as effective value circulation as possible. (Sitra 2015a; Seppälä et al. 2016)

CE model has multiple potential opportunities, which reach to all three dimensions of sustainability. Firstly, CE model is based on environmental economics, and hence is an economic model that can contribute to higher competitiveness at business, region and national level through increase in effectiveness of resource allocation, utilization and productivity, through increased resource security, and even through increased sustainability. Secondly, environmental issues are responded and negative externalities of conventional economic businesses are reduced, through redesigning the industrial and economic structures in ecological and circular way that recycles resources and wastes in a closed loop. Third and least considered social pillar of sustainability can be affected by creating employment opportunities and equal economic wealth through innovations and resource efficiency, potentially decreasing poverty rates as well as by reducing health issues by cutting emissions

and pollution, for instance. (Geng & Doberstein, 2008; Su et al., 2013) This section focuses on the least investigated social opportunities of CE model.

3.2.1 Job opportunities

Labor is at the heart of social dimension of sustainability (Stahel, 2012). Unemployment sets costs, inefficiency and decreases welfare in society, and consequently is often related to health issues and even exclusion (The Club of Rome, 2015). Furthermore, the working conditions, child labor and minimum wages in developing countries are under critical debate. Nevertheless, labor can be seen as most adaptable, and hence most valuable of all resources, because of its qualitative characteristics, such as creativity, versatility and renewability. Hence, substituting other resources with labor can be an intelligent and productive solution. (Stahel, 2012)

The purpose of CE concept is to conserve the rare virgin natural resources and materials, so that they can be used over and over again, and their value will be treasured and maintained for long term in multiple products. (Pantsar & Herlevi, 2016). Thus the target of CE should be resource efficiency rather than waste reduction. Additionally, it is essential to see CE not as environmental sustainability alone, but as a competitive strategy for business. (The Club of Rome, 2015; DeGroene Zaak & Ethica, 2015) The value is maintained and created not only by recycling the raw material, but also by providing maintenance and repairing services for product as well as designing product so that it can be easily updated with changing trends and developing technology. CE model have a potential to create new business opportunities, and hence new employment opportunities. In fact, according to Stahel (2012) labor intensity is three times higher in product manufacturing, maintenance and reuse functions than in raw material extraction and refinement. Thus the jobs possibly lost in the raw material businesses, would be replaced and most probably even get multiplied, as a cause and effect of CE implementation. Obviously, digitalization and fast developing artificial intelligence may simultaneously bring crucial solutions to CE implementation as well as dispossess part of job opportunities created.

In Finland and Europe, the unemployment rates have been a lot debated issue since latest financial crisis. While EU has adopted CE model more as a waste management program, there are much more far reaching opportunities with CE strategy implementation. Still, extremely large amount of valuable resources and vital nutrients end up into landfills after one-time use, and simultaneously employment opportunities are wasted. For instance, even though Finland is known for e.g. its well-developed bottle recycling system, over half of the waste is still not recycled or reused at all and we are lacking innovative and competitive solutions (Sitra 2015a). According to WRAP report (2015), CE solutions have already provided 3,4 million jobs in Europe, and is expected to expand the employment opportunities by 1,2 million with current development and even 3 million jobs with transformational development by 2030. In Finland, with CE solutions at least 75 000 jobs could be created and unemployment rate could be reduced by third according to Club of Rome report (2015). CE creates jobs to all levels of skills, especially for people with lower education. Remanufacture and repairing functions hire more educated people, whereas system development and management activities as well as demand for cleaner technologies require highly educated people. The previous work experiences are instrumental. (Pantsar & Herlevi, 2016; Stahel, 2016)

3.2.2 Environmental opportunities

The emphasis of CE theory has been in the environmental benefits, such as using cleaner technologies or reducing of resources. However, those environmental solutions also provide social opportunities. Traditionally, most climate change mitigation strategies have based on sector- or industry-level, with primary focus on energy use, whereas the general resource use in society has drawn less attention (The Club of Rome, 2015). While CE focuses on resource efficiency and cross-industrial collaboration, there is much greater opportunity to save resources and develop innovative solutions. According to Club of Rome report (2015), CE model obtains three main decoupling strategies, i.e. enhancing energy efficiency, increasing renewable energy use and material efficiency. Together these all strategies can support and enforce each other in virtuous circles resulting cut in two thirds of carbon emissions, employment opportunities and improvement in trade balance.

However cutting emissions for instance does not only slow down climate change, but has social opportunities as well. Diminishing pollution means better air quality, which can lead to less respiratory sickness, thus causing less health care costs for an organization or government in the long run. Additionally resource-efficiency has much wider potential than reducing waste and saving planet resources. It also has political influence, while the local economies have opportunity to become less dependent on others and more self-sufficient, which can even lead to less international disputes and decreasing stream of refugees. (Luoto, 2016) Furthermore, nutrients which are vital to living conditions, such as phosphorus and nitrogen, can be conserved by supporting the natural regenerative cycle (Sitra 2015a). Because of the waste reduction and recycle of resources and nutrients, more fertile soil can be released for instance for food production, which is critical especially in developing countries. One good example of nutrition cycle is a finnish meat industry waste management company Honkajoki Oy, which collects meat industry wastes and classifies and upgrades them so that the whole carcass will be utilized and turned into products such as fertilizers (e.g. phosphorus & nitrogen), proteins and energy resources in a process that has positive energy surplus. In addition to large product variety, the company provides services for collecting the wastes as well as for research and development. (Honkajoki, 2016)

3.2.3 National economy opportunities

Environmental quality cannot be maintained simply via economic growth, as can be seen in traditional economic models. On contrary, in CE model, achieving sustainable growth and treating waste as resources can be seen as generative model for economic growth. (George et al., 2015) However, CE model actually cannot further the economic growth but rather provides steady-state growth model (Ghisellini et al., 2016) in sustainable terms, creating value to whole society through economic robustness of local communities. Especially innovative solutions and cleaner technologies often related to CE implementation may result as competitive products to export. Nevertheless, as noted above reduced pollution can decrease health care costs, and resource efficiency may even decrease the stream of refugees (Luoto, 2016), thus contributing to the national GDB. Moreover, new job opportunities created in circular business development reduce unemployment rate,

and hence can further accelerate economic growth by reduced unemployment support costs as well as other unemployment caused social costs as well as increased tax income. The viability of national economy also usually increases wealth of individuals and communities, because of the new employment opportunities as well as public investments in infrastructure, services and education.

However, in order to achieve these benefits of CE implementation, whether at business level or national economy level, some changes need to be done in policies and regulation to support this kind of development. For instance more proactive use of public procurement is needed (The Club of Rome, 2015). CE framework is based on collaboration and stakeholder inclusion, and that kind of careful consideration is needed in public procurement too in order to develop towards more sustainable society. In addition to longer lasting and stronger relationship, a close collaboration between public procurer and supplier throughout the value chain can result greater contribution of both parties towards CE, thus reducing raw material utilization and waste generation at the same with securing economic benefits to both parties. (Witjes & Lozano, 2016) Furthermore, rethinking of taxation and regulation, such as tariffs and emission taxation, is needed to support companies striving towards more sustainable business models. In order to track and manage the improvements caused by CE development, new policy measures need to be acquired and developed, such as resource efficiency targets for investments and procurement processes (The Club of Rome, 2015), environmental and social impact measures, as well as blended performance measures for CSV and overall sustainability of new economic systems.

3.2.4 Innovation and business model opportunities

CE and business development requires rethinking of conventional value chains, business models, product design and distribution channels. Thus CE development has potential to generate crucial innovations. Innovations, collaboration, research and development have a big role in economic wealth in society, but those can also directly derive social impact. Many alternative business models and distribution channels exist, which can contribute to value creation of different circular models. These business models differ by the range from providing primarily products to providing exclusively services (Delft University, 2014). Additionally different

approaches exploit different kind of value gaps in existing value chains, providing various opportunities for more circular design.

The existing literature and reports provide various lists of business models strategies for circular design. However, some common elements recur in all of these lists, which are focal in circular thinking. In the *Products that last* project driven by Delft University (2014) six strategies of circular product design are identified. Firstly, long term product attachment and trust should be emphasized in product design, meaning that like, satisfaction and trust towards product would last over changing trends and time. Secondly, products that are loved should last longer too, taken that the product characteristic is such that it needs to last. This would presumably also increase the former, i.e. trust and satisfaction towards the product. Thirdly, product components should be standardized to fit other products as well to increase the product compatibility in the market. In the opposite Apple Inc. has designed its products not to be easily connected with competitors' products, which have surely resulted both Apple loyalty and irritation among consumers. Fourthly, enabling product maintenance and repair, instead of striving for shorter trade-cycles is essential. Today, many computers for instance seem to be designed to only last for the period of guarantee, and too expensive to be fixed. Providing high quality and modular computers with worth of money maintenance and repair services would result customer loyalty more probably than providing devices designed to soon break-down. Additionally, rare raw materials needed for such computers would be conserved for multiple times of additional value from services provided. Fifth strategy, would give the product even longer life, allowing product upgradability and adaptability for improved or additional technology for instance. The last strategy is related to end of product life time, ensuring product components and valuable raw materials to be separated and reused easily for further products. All of these strategies are essential to give a thought in circular business design, and involve important elements of CE, such as durability, services, recycle and collaboration. A very inspiring example of circular devices is a Finnish Puzzle Phone innovation (Puzzle Phone, 2016), not yet launched though. The main idea of Puzzle Phone is its durability and three easy-to-change modules, enabling the phone's reliability, modularity, upgradability and reparability. In addition to repairing, the modules can

be reused and the scarce raw materials can be recycled in the circular value chain of this device.

To accelerate the effective use and cycle of resources simultaneously with economic value, five elements for business models and distribution channels can be found specific to circular design. Firstly, distribution models that provide access but not ownership to a product, such as leasing, are common in circular business thinking (Delft University, 2014; Sitra, 2015b; Valtonen, 2016). Leasing or providing another service of accessing a product are beneficial, while company holds the ownership of raw materials and resources, thus being able to use them in multiple life cycles by either repairing the product or reusing the materials for a new product. Additionally, if the supplier also secures the performance of product, the customer is probably willing to pay more for the service. There are many companies already using these kind of business models, for instance 3 Step It, which provides leasing and recycling service for companies' devices, Philips, which provides lightning services for company premises as well as smaller scale businesses, such as Repack providing durable packages and Mud jeans leasing jeans.

Secondly, circularity can be accelerated by energy and material resource choices, in both biological and technical cycles. Products should be manufactured by favoring renewable and recyclable materials and using renewable energy resources. Energy can be produced from bio fuels or recycled or renewable resources rather than from fossil and unrenewable sources. Also energy released in biological production processes should be considered. Materials used and recycled should be part of product design. Using recycled resources in multiple product life cycles, can result cost-benefits especially in case of growing scarcity of resources. (Valtonen, 2016; Seppälä et al., 2016)

Thirdly, material efficiency can be further accelerated by optimizing the production processes and promoting cluster and industrial symbiosis development. Inefficiency in material utilization is still very common in organizations, causing unnecessary costs as wasted by-products and waste fees. Resource efficiency can be actually very profitable for organization by reduced waste, recycled materials and well managed by-product flows. One organization's waste can be another's resource, and close collaboration between industrial symbiosis partners can result real

competitive advantage through sharing knowledge, technology and resources. (Seppälä et al., 2016)

Fourthly, by lengthening the product life cycle and performance, one product can result multiple cycles of added value as well as customer trust and loyalty. To begin with, a long-life high-grade product can be sold with higher price, if the product has a good reputation, such as German washing machine company Miele. If the product inherently is combined with consumables, the non-consumable part of the product should be durable combined with consumables providing continuous cash flows. (Delft University, 2014) After the product has become outdated or unusable, a well-designed product can still be repaired, remanufactured, updated, reused in other purposes, or resold in well-trading secondary markets. For instance, logging machine producer Ponsse also repairs the machine components, and Isku RealGreen provides secondary markets for its used furniture. (Seppälä et al., 2016; Valtonen, 2016)

Furthermore, ‘sharing is caring’ thinking is important also for CE. The value of products, services and facilities not in use is wasted if not utilized and shared to others. Sharing of materials and products can take place between consumers or organizations. (Seppälä et al., 2016; Valtonen, 2016) For instance, there is a real option for an organization operating in seasonal markets to rent part of its facilities in slack times, if the facilities are designed that way. In clothing sector, RINS invented by Finnish blogger and clothing designer Anniina Nurmi is in development to create a clothing rent-in-shop for consumers.

Moreover, secondary markets can be created as rendezvous for unused products and those who need them. For instance, AirBnB is an online service for renting private consumers’ vacant apartments for short time periods. Another example is Kuinoma, a Finnish online service for safe renting and borrowing of equipment from consumer to consumer. These five approaches are parallel in the means of circular design, thus in few cases choosing only one approach is reasonable. Therefore, suitable business models, strategies and distribution channels should be carefully determined in circular design considering the whole value chain of a product or service.

3.3 Challenges of circular economy

The opportunities of CE rely on the environmental and social benefits, which are achieved with economic efficiency. However, while the conventional businesses rely mostly on market economy, the prices of materials and natural resources remain relatively low, because they almost only depend on the short-term financial values, but not on the external costs on environment and society. Hence, Andersen (2007) stresses that only a limited range of circular business opportunities will be implemented by company managers, who seek for profit maximization. On the other hand, a longer-term profit and success seeking manager can recognize that there is a real option in recycling, reusing and circular business models. Those should already now be implemented in order to reap the profits at the point where virgin materials become scarce and costly. Not to mention the fast growing market demand for environmentally and ethically sustainable products.

Several challenges have been identified in existing researches (see e.g. Geng & Doberstein, 2008; Geng et al. 2012; Su et al., 2013). Although this literature is based on national policy level (or more precisely China's) CE model implementation, some of the challenges confronted may also occur at business level. The barriers identified are the lack of information and advanced technology, weak economic incentives, poor development of regulation and lack of standard system for performance assessment, lack of public awareness (Su et al., 2013).

Firstly, the corporations applying circular business model need more information about their suppliers and partners. Companies and product life cycles are interlinked with increasingly complex supplier chains. More systemic information is needed in order effectively plan and manage the implementation of CE principles. In order to achieve the objectives of circular business model implementation, extensive information that combines financial, environmental and social performance is needed. (Geng & Doberstein, 2008; Su et al., 2013) In order to achieve these kinds of universal information systems extensive efforts are needed from businesses, research institutions, associations as well as cross-national policies

Secondly, implementation of all CE principles requires advanced technology in most cases (Geng & Doberstein, 2008; Su et al., 2013). At least development and

updating of facilities, equipment and processes are needed in almost all stages of circular business model. This can occur as a barrier for small companies, if the costs of new technology or process changes get too heavy related to estimated benefits of circular strategy. According to Su et al. (2013) international practices reveal that economic factors remain one of the most dominating reasons for environmental and resource conservation. As good as environmental and social objectives a business has, the economic sustainability is the prerequisite in most cases. Hence some political incentives might be quite effective for development towards circular and more sustainable economy (Seppälä et al., 2016).

Thirdly, political intervention can sometimes accelerate the development of new environmentally and/or ethically sustainable technologies or processes, but political decisions can also slow down this kind of development. Lack of economic incentive or inconvenient taxation might occur as barrier for circular business model development. For instance, a real difference between virgin material use and recycled material use taxation, would probably give incentives for this kind of production development. In addition a value-added tax relief could support a more sustainable consumption. (Geng & Doberstein, 2008; Su et al., 2013; Seppälä et al. 2016) Furthermore, especially for CE, tariffs might encumber the recycled material flows from one country to another, in case the whole closed loop value chain cannot be implemented in one country.

Another governmental challenge might be a disadvantageous development of legislation and lack of regulation and standards for sustainability measurement and reporting (Su et al., 2013). For instance legislation might forbid the use of some recycled wastes or export/import of waste or residues. Even though the ambition would be to develop the legislation to more supportive direction, the change process is often very bureaucratic and slow. For instance waste hierarchy introduced by EU and adopted by many countries still have confronted some limitations and overlaps in guidance and measurement, regardless of several advance efforts (Singh & Ordonez, 2015). In addition, if sustainability measurement and reporting would be regulated, the development of commonly accepted standards might have been faster. In order to evaluate the total impact of circular model development and implementation, indexes for social impact, for absolute reduction of energy, water

and material use as well as for industrial and/or regional symbiosis should be required and developed (Geng et al., 2012). As found in the previous chapter, some cross-dimensional indexes for performance measurement and reporting systems have already been developed, but the problem lies in the lack of generally accepted standards and common practices of measurement, which would make all companies comparable.

Furthermore, public awareness and participation is essential for the development of more sustainable society and circular business model success (Geng & Doberstein, 2008, Su et al., 2013). Without public consciousness of the serious social and environmental flaws of today's capital market, people don't have the decency to demand for more sustainable products and businesses. Moreover, without the public awareness, the benefits and impacts of CE are only understood by handful of people. On the other hand, without participation of all stakeholders into the circular model development, important aspects might get without attention, and in the worst case the model will not work at all. For instance, sustainable and ethical as the product would be, it will not be successful, if it doesn't meet the consumer preferences.

In addition to the more general challenges introduced above, there are also some implementation barriers of circular model specific to business level. Firstly, the debate about CE product design in practice has been limited. According to the research of Singh & Ordonez (2015), there have been challenges to realize the central principles of CE, i.e. the closed material loops and material recovery. The practical experiences have resulted mostly new products from recycled materials rather than taking back manufacturer's own products to secure material resources. This challenge has been partly a result from prevailing waste management instead of manufacturing-centered resource management in place of material collection system. Additionally, product and service design is expected to address social, environmental and economic requirements of sustainability in order to realize the goals of CE. (Singh & Ordonez, 2015)

Secondly, because of the prevailing linear mindset and structures in businesses, industry and society need to be radically changed in transformation towards circular model. This is not an easy task, requiring total and expensive changes in processes

and business model as well as understanding and commitment from management and the whole organization (Lieder & Rashid, 2015). Furthermore, a complete organizational transformation usually confronts resistance and even anxiety among employees, thus CE model should be deeply rooted into organizational culture. Finally, the new level of collaboration with stakeholders requires knowledge sharing and transparency, which might be found risky, whereas communication with stakeholders and consolidation of systems and processes can be a challenging task.

Limitations of social dimension inclusion

The CE concept is generally based on new economic model, which strives for environmental well-being and sustainability. However, the latest literature on CE stresses the limitations concept has regarding the third pillar of sustainability, i.e. social well-being. Although massive ecological efforts of CE clearly benefit humankind, the debate on CE is otherwise relatively silent on the social issues, such as social equality. (Murray et al., 2015) The moral and ethical issues are as important as environmental issues when designing the circular business model, while at some point those issues have to be confronted.

One social pillar limitation concerns today's consumerism. CE concept and model has focused on the technical and systemic process development, although concepts such as Shared Economy and longer lasting products have been introduced as well. Nevertheless there lies a risk of "hyper-consumerism", meaning that CE outputs and material innovations will only be added to existing outputs of 'business as usual' thus fostering increased throughput of goods. Furthermore 'sustainable products' and new possibilities to recycle might justify consumption in the eyes of consumers and lead to hyper-consumerism (Hobson & Lynch, 2016). On the other hand, longer durability should not be the absolute value of a product. The energy and resources used, as well as the recyclability and removability should be carefully considered when designing the longer lasting product. (Murray et al., 2015; Hobson & Lynch, 2016) If a product for instance is inherently for single use only (e.g. a napkin), much more valuable is the recyclability of the product and the energy and material used for product.

Existing literature has defined some other limitations and unintended consequences of CE model too. Firstly the extensive reliance and promoting of green technology (e.g. renewable energy) has inherently good purposes, but the outcomes of such technology should be carefully considered. For instance, it matters where the electricity comes from for an electric car. Secondly, CE concept has been criticized for over-simplifying the rules of nature. A self-interest based model, that leaves most of the variables of nature out of consideration does not serve its inherent purpose, but will stumble with same issues than previous trials and errors. Furthermore, the bio-mimicry as one of basic principles of CE may not go far enough to fill its purposes. It might end up “pretending to be biological rather than actually being biological”, while it is quite hard for technology to achieve what nature achieves in biosphere. (Murray et al., 2015)

The limitations of CE concept considered above do not override the benefits and the feasibility of the concept. This discussion is only for critical consideration of all the aspects, when designing and developing a circular model. The CE model has received lot of positive attention among national policies as well as corporations, but relatively little critical theoretical discussion. Hence, Murray et al. (2015) suggest to carefully review the model and redefines the concept of CE as “an economic model wherein planning, resourcing, procurement, production and reprocessing are designed and managed, as both process and output, to maximize ecosystem functioning and human well-being”.

In conclusion, transition to CE model requires radical change of values in the whole society from top-down and bottom-up (Lieder & Radish, 2015; Seppälä et al., 2016). At business level, it requires systemic multi-level change including product and service design, technological innovations, new business and distribution models as well as stakeholder collaboration (Lieder & Rashid, 2015; Witjes & Lozano, 2015; Seppälä et al., 2016). In governmental level, it requires political actions and legislation towards CE principles instead of only waste management for instance. At consumption level it requires more responsible and conscious purchase decisions from consumers (Ghisellini et al., 2016) as well as less consumption on products and more on repairing and maintenance services. Eventually, the overall market should go to direction where high-quality products are available for all

consumers, and repair, reuse and reproduction of products and materials is cost effective (Seppälä et al., 2016).

3.4 Shared value creation in circular business model

According to the extensive theoretical review many confluences can be found from sustainable business model, CSV and CE literature. CE literature aims to address all dimensions of sustainability. However, existing literature stresses that the social pillar of sustainability has gained too little attention in CE literature and practice. Additionally, as CSV literature notes, businesses and studies have been concentrating too much in either social or environmental influence separately, but lost the meaning of sustainability in its entirety, with the interlinkages and dynamism between all three dimensions.

CE model has huge potential to address sustainability as a whole, but a lot depends on the design and implementation of the model. The implementation of CE model can range from a product made from recycled material to a sustainability strategy of a whole nation. However, to succeed a true transition to CE model requires change of values in the whole society: rigorous changes in production, design, consumption and resource management, political interventions and support from regulative environment, as well as improvement in cost-effectiveness and profitability of reuse and reproduction. Additionally awareness of sustainability in whole society and improvements in transparency, performance measurement and reporting practices are needed.

Emphasizing the social dimension, CE model primarily provides opportunities for society through economic viability and environmental improvements. National economic growth, job creation, innovations, decreased waste loads and pollution as well as resource efficiency all can create social well-being in a virtuous circle. However it should not be forgotten, that circular model does not exclude more direct interventions to social well-being and acting as a social enterprise. Quite the opposite, direct and indirect social influencing should be equally considered with environmental and economic consequences, when planning and implementing circular model.

CSV concept fits well into circular thinking model, bringing new aspects as well. Finding opportunities from existing core competencies for circular model development and CSV can result long-term competitive advantage, if the change is rooted to the whole organization strategy, culture and systems. Another important message of both CSV and CE is the importance of collaboration and stakeholder inclusion. CE model should be based on close collaboration between partners from the whole value chain. In many cases, models such as industrial symbiosis or another type of close partnerships are needed in order to secure resource efficiency and sustainability of the whole life cycle of product or service. It should be noted, while the measurement of social impact and sustainable performance are challenging and complex tasks, circular model might even confront an additional challenge in measurement and reporting of CSV, because the ideal would be to assess the CSV of the whole model as well as the individual partner organizations separately. Furthermore, ability to track the additional value achieved by joint value creation would be essential.

4 EMPIRICAL CASE STUDY AND FINDINGS

This empirical part of the study examines a piloting project of closed loop cotton textiles circulation called Relooping Fashion Initiative (RFI). The RFI project is driven by Finnish research organization VTT, and taken part by several other Finnish organizations, to close the value chain of cotton textiles. This section first looks into textile industry at the moment and in the future, to better understand the need for CE model for cotton industry. Needless to say, there are many social and environmental issues related to textile industry and especially cotton production, which will be shortly discussed in the following section. Secondly the research data and methods of the study are introduced. Thirdly, the RFI project, and its partner organizations are introduced more closely, and the research data is analyzed. Finally, the results of the study are presented and discussed.

4.1 Textile industry's current and future state

The whole textile industry and clothing market is going through tremendous change, because of the shower of accusations about social and environmental evils and unsustainability of today's operations. A phenomenon of faster and faster trend cycles with lower and lower costs called fast fashion, is causing serious issues on consumption culture, environment and social value chain of textiles and clothing. For instance, the global waste and environmental impacts, such as water usage and carbon emissions are significantly contributed by textile industry (Wilson, 2015). Clothing waste is becoming a weighty problem too. For instance in Sweden (in 2008), the new stock of clothes is calculated 15 kg per capita yearly, whereas reuse and resale of used clothes is only 3 kg per capita yearly, of which only 20% is resold in second-hand store and rest is exported back to developing countries, i.e. manufacturing countries. 8 kg per capita yearly ended up to waste streams. The inflow and waste-/outflow of clothes is rapid, gaining huge value potential for recycle and reuse of materials. (Carlsson et al., 2011; Singh & Ordonez, 2015) Social impacts in the whole value chain of today's textile industry are especially serious and have gained huge attention in past years, culminating e.g. to the collapse of Bangladeshi sewing factory. A Netflix document called "The True Cost" clarifies the ghastly facts of textile industry, from cotton farmer's exposure to toxic chemicals in

a sweating system to clothing manufacturer's ignoble working conditions combined with below minimum wage.

In cotton industry, the environmental and social issues are especially critical, and the need for more sustainable solutions is crucial. Environmental and social issues are related to cotton farming, manufacturing as well as procurement and retailing. For instance, one pair of cotton denim jeans requires on average 42 liters of water, uses harmful chemicals and is very energy intensive, especially if stonewashed (Wilson, 2015). Not to mention the water, energy, toxic fertilizers and soil area required for farming of cotton, causing diseases, poverty as well as soil erosion, lack of food and nutrition to local communities.

Luckily, these problems are getting more and more attention. Because of the growing awareness, the demand for more sustainable clothing and textiles is increasing among the bigger crowd of consumers. Consequently huge variety of efforts towards more sustainable clothes and closed-loop textile systems have been introduced in past years, such as RFI, HM's garment collecting initiative, and Puma's InCycle cradle-to-cradle program. For instance, in UK the Sustainable Clothing Action Plan SCAP 2020 commitment is part of WRAP UK (Waste Resource Action Program) and in Scotland Zero Waste Scotland has promoted CE to Scottish clothing. The lessons learned in Scotland's projects is that lot of innovation has focused on technical textiles and digital design, whereas lacking innovation in business models and methods for material circulation in entire sector. The goals for competitive advantage and economic value creation have exceeded the objectives of closed loop sustainability. (Wilson, 2015) However, the WRAP report (2015) emphasizes that the most economic value potential of CE would probably be on the material productivity of the whole system. For clothing industry this would be realized by evaluating the gross value added for sectors throughout the value chain, including textile producers, clothing manufacturers, retailers and second hand services, repairing services and recycling (WRAP, 2015) as well as renting services. Clothing industry's development activities should concentrate on closed-loop sustainability combined with provenance traceability, durability and quality, following e.g. Filippa K's example of strong brand built on longevity of quality and design

(Wilson, 2015). However, a more inexpensive brand with quality and sustainability integrity is needed for the masses.

4.2 Data and method

The empirical part of this research is carried out as a qualitative case study, examining the RFI piloting project's experiences about building a closed-loop business model in cotton clothing industry. The RFI project is taken part by nine organizations, representing different sectors and stages of the clothing industry value chain. The data for this research was gathered by interviewing all the partners of the RFI piloting project. The variety of interviewees' industry, size and nature, has potential to give a holistic view of the motivation, challenges and opportunities experienced in circular model creation. In addition, each party's engagement and incentives for shared value creation help to extent the understanding of the research field (Argawal et al., 2015). The interviews were carried out as theme interviews, meaning open discussion through theme questions and structure determined in advance. The benefit of theme interview is, that additional questions and topics can be raised, depending on the course of discussion. All the interviews were conducted face-to-face, recorded and retrospectively transcribed. The duration of each discussion ranged from one to two hours. In addition to interviews, a customer enquiry conducted by RFI project has been analyzed.

The research data and qualitative methodology reflect the complexity and interconnectedness of the research problem. As stated above, sustainable value creation, and especially social value creation are complex and dynamic concepts, whereas CE model requires consideration of the whole value chain sustainability regarding multiple stakeholders. The purpose of qualitative study is to describe the real life complex and interrelated occurrences, to achieve holistic understanding. Analysis requires absoluteness; explanation should not be left with possibility for conflicting constructions. Quality is the question of meanings, and the essence of the differences in meanings. To understand the qualitative information, one needs to understand the claim and its opposition. (Dey, 1993; Hirsjärvi et al. 2009, 160-161; Alasuutari, 2011, 38) On the other hand, a single case study (RFI piloting project) is the most appropriate when study deals with fresh perspective (shared

value creation in CE) to the problem, enabling the in-depth analysis and theory construction of real life phenomenon (Riege, 2003; Argawal et al., 2015)

4.3 Case Relooping Fashion Initiative

The Relooping Fashion initiative, Finnish name of the initiative being Circular Economy Model of Textiles (TEKI) project, aims to pilot and model a closed-loop business ecosystem in line with the principles of CE, called Relooping Fashion Initiative. The Technical Research Centre of Finland, VTT has developed a unique cellulose dissolution technique which enables turning old worn-out cotton garments into new fibers. Together with a group of Finnish partner organizations from different stages of clothing value chain, VTT aims to release the first prototypes and a clothing line during 2017. The aim of the project is also form a basis of new industrial way to use textile waste, and study the technological requirements of dissolution-based recycling. The common goal of partners is to promote CE and recycling of textiles while adding value to their existing business activities or creating new business. (VTT, 2015) Finally, the RFI piloting project can present recommendations for future resource efficiency initiatives in terms of CE. Furthermore it can potentially contribute to Finnish innovation and textile industry's sustainable growth. RFI has been rewarded by leading CE awards program The Circulars and has gained attention globally, for instance in Sustainia 100 publication (Ethica, 2016). In this chapter, first the partner organizations and their roles will be shortly introduced and the data from interviews will be deeply analyzed and discussed.

VTT – Ali Harlin

VTT Technical Research Centre of Finland Ltd is a leading research and technology company in the Nordic countries. VTT provides expert services in research and knowledge and develops smart technologies, profitable solutions and innovative services to domestic and international customers from public and private sectors. VTT also has a national mandate in Finland to build success and well-being solutions for society. (VTT, 2016) In the RFI piloting project the role of VTT is to develop the technology for turning cotton waste into new fiber, and to coordinate the project together with Ethica. With the new technology developed by VTT, cotton not suitable for reuse can be turned into cellulose fiber, which can be further produced

into new textile fibers without any harmful chemicals or new material. The technology is significantly more environmental friendly; compared to virgin cotton it saves 70% more water and decreases carbon footprint by 40-50%. (VTT, 2015)

Ethica – Paula Fontell & Anne Raudaskoski

Ethica is a Finnish development and consulting firm specializing in Circular Economy. Started in 2013, Ethica provides consultancy for domestic and international private and public organizations, in various sectors and sizes. Ethica helps companies to identify their circular business opportunities, and create circular economy strategies, action plans, business models and service concepts. Ethica promotes trailblazing and differentiation within global markets. (Ethica, 2016) Ethica's role in the RFI is to develop the model of closed-loop textile ecosystem in accordance with the principles of CE, which creates value to all stakeholders and surrounding society alike. Additionally Ethica has conducted a consumer research of the consumer's values and attitudes towards the new model. (VTT, 2015)

Helsinki Metropolitan Area Reuse Centre Ltd – Pia Engström

Helsinki Metropolitan Area Reuse Centre Ltd or better known in Finnish as Pääkaupunkiseudun Kierrätyskeskus Oy, is a Finnish recycling center. Operated for 25 years, this non-profit social enterprise offers an alternative to single-use culture. The organization implements its mission of improving environmental state, by accepting usable products, reselling those products with inexpensive prices and by educating and increasing awareness about environment and sustainable consumer choices. As a social enterprise, the organization provides jobs for long-term unemployed people and people outside the regular labor market, such as disabled people, people without Finnish language skills and people performing community service. (Kierrätyskeskus, 2016) Helsinki Metropolitan Area Reuse Centre Ltd has the role of collecting textile waste and pre-process, i.e. sort cotton waste and remove buttons and zippers etc. Only the clothing that is non-reusable or materials that are not recyclable as such end up to the process. (VTT, 2015)

Suez – Christian Hindersson

Suez, previously known as Sita, a Finnish environmental and waste management company, is one of the largest environmental management companies in Europe.

Suez specializes and provides solutions in water cycle management sewage treatment, waste recycling and utilization as well as city and environmental planning. Suez's vision is to collect and recycle waste into resources. Suez provides services and solutions to public and private organizations as well as consumers. (Suez, 2016; RFI, 2016) In the RFI Suez does the crushing and mincing as well as the transportation of the cotton waste (VTT, 2015; Suez interview, 2016).

Pure Waste Textiles Oy – Jukka Pesola

Pure Waste Textiles Oy is a growing Finnish company, which uses recycled textiles and yarn to make clothes and accessories. The production manager, Jukka Pesola found a new process from Chinese recycling practices, to make yarn from 100 percent recycled material. The raw material used is from by-products and surpluses of Chinese and Indian clothing manufacturers and spinning mills. The process does not use any additional virgin materials, such as water, virgin cotton or dyes. (Erkinheimo, 2013) Pure waste Textiles' role is in the RFI is to turn the fibers made with VTT's technology into yarn and to weave the yarn into fabrics (VTT, 2015).

Seppälä Oy – Erica Adlercreuz

Seppälä Oy is a Finnish fashion chain and family business owned by Eveliina and Timo Melentjeff. Founded in 1930 and operating with more than 100 stores in Finland and Estonia, Seppälä provides women's, men's and, children's clothing, and employs over 500 people in Finland and 100 people in Estonia. In corporate responsibility, Seppälä emphasizes for instance the increasing share of responsible materials, the supply chain responsibility, product safety. In addition to the RFI, Seppälä collaborates with Plan Finland, Pure Waste Textiles and Paptic recycled plastic bags. (Seppälä, 2016) In the RFI, Seppälä has run a used clothes collection campaign. Additionally, Seppälä designs and produces a line of prototypes for clothes and manages the commercial clothing line for its customers. (VTT,2015)

RePack – Petri Piirainen

RePack is a small Finnish company offering sustainable, reusable packaging system for online retailers and shoppers. The packing process simply enables the customer to return the package to any post box in the world and free of charge, to receive a reward voucher to any RePack online retailer. Already 21 brands are using

Repack for their online stores, such as MUD jeans, Globe Hope, Pure Waste Textiles and Finlayson. (RFI, 2016; Repack; 2016) The aim for RFI is to deliver the clothes in RePack packages, to eliminate the usual packaging waste from online shopping. Additionally, packages can be used to return any old textiles to Helsinki Metropolitan Area Reuse Centre for recycling. (VTT, 2015)

Touchpoint – Carita Peltonen

Touchpoint is a inspiring sustainable corporate work wear company, providing its customer companies responsible and ecological solutions, often using recycled materials. Ethical solutions are considered in both manufacturing and materials of clothes. Additionally Touchpoint has a brand called Trashtag, desing of 100 percent recycled waste and surplus materials, collected from Touchpoints clients. (RFI, 2016; Touchpoint, 2016) Touchpoint's role in RFI's value chain is to extent the target group from consumer products to corporate working clothes.

Lindström – Tarja Hämäläinen

Lindström Group is a leading garment service companies in Europe. For 165 years it has provided corporate working wear, personnel protective equipment as well as textiles for carpets, hotel, restaurant, facility and industrial needs. Lindstöm already operates in CE principles. For instance, Lindström does not sell but provides a service for corporate working ware, by delivering and maintaining the garments. This requires durability and manageability of a garment as well as functioning logistics and solutions for textile material circularity. (Lindström, 2016; Poussa, 2016) Lindström's role in RFI project is similar to Touchpoint's but on a larger scale. Additionally, Lindström provides funding, experience and knowledge to the project.

4.4 Empirical results

Below, the discussions with each partner have been summarized according to the interview themes structured in Appendix 1. The purpose of the interview was to have a view, how CE model and value creation is seen by RFI partners, and how do they think about the social value creation and measurement of the RFI project. Additionally the ultimate motives of partners for attending the project were examined as well as how they see the importance of this kind of project. The interviews aimed

for as open and confident discussion as possible, and hence the citations are held anonymous.

4.4.1 Conceptual meanings CE and the motives for RFI project

In the beginning the of each discussion theme, the interviewees were asked to explain in their own words the core concepts of CE, value creation and CSV. The purpose of this is to explore how the RFI partners understand these concepts, and if there are differences in the interpretation between partners understandings or between practical and theoretical meaning of concepts. Importantly, the understandings and interpretations of interviewees might affect their responses and the results of this study.

Concept of CE

It seems that the concept of CE is not unambiguous and clear. The understandings of CE concept range from solely recycling or waste management (quote 1) to holistic sustainable business model value creation (quote 2).

> *Reusing of a product as many times as possible. Firstly, reusing of product as such as many times as possible. Secondly, to repairing the product or recycling the material. Thirdly, striving to avoid destroying the product, e.g. as energy resource, as long as possible. (1)*

> *Concept of sustainability is too rarely mentioned in circular economy model discussion. It is often an empty phrase, rather than a real driver of actions. Natural resources running out surely are [in discussion], but it is often seen as resource issue. Circular economy model is the question of designing durable and recyclable products, meeting the requirements and expectations. In my opinion, circular economy concept encompasses the idea of modesty. – We strive to produce with the least wasted resources and use them wisely and effectively. I also means, that we should consume less and produce more high-quality products. (2)*

The theoretical determination of the concept as economic model for sustainable value creation and resource management in the whole value chain, in the way that creates value to the whole ecosystem and society, is not completely adopted by all the RFI partners. The resource efficiency and waste reduction has been quite well recognized, but wider opportunities and challenges of CE could probably be better tackled with a more holistic understanding of the concept (see quote 3).

> *System and an operative model based on economic framework. By designing and planning, the objective is not only to minimize the negative environmental impacts, but to maximize the positive ones. With a closed loop model new business opportunities are created. Closed loop encompasses the range of looser and tighter circles. It should not be compared to recycling, which is only one and the last considerable way for circular model. Before recycling many other ways are doable to extent the products life cycle. [Circular economy promotes] an alternative attitude towards material orientation and regeneration. (3)*

Motives for attending the RFI project

In the beginning of the discussion, also the motives and reasons for attending the RFI project were discussed with interviewees. The responds varied quite much because of the variety of partner organizations' line of business and industry. However, the most common reasons and motives could be found in responsibility development, the future of textile industry, the need for solutions for textile waste management, as well as collaboration and knowledge. Firstly, partner organizations realize that current ways of doing business is not economically sustainable, because demand for social and environmental responsibility is growing. Many of the organizations have responsibility and circular thinking already deeply rooted in their ideology and values. Additionally, partners see the potential to be part of trailblazers in Finnish innovation.

> *When we heard about the VTT technology, we immediately saw its huge potential and global possibility to solve big international challenge. (4)*

> *I don't believe that any of organization attending this kind of project would solely have goodwill as motive instead of commercial motives. This kind of initiative requires so much human resources, remarkable investments and change of operation models. I would say that all attendees see the potential here to contribute to their own business. (5)*

> *The whole ideology and values of our organization are related to our willingness of making world a better place, regardless one might think it's a clichéd expression. Corporates also have the responsibility to choose and act in the way to promote circular economy, such as using old textiles with this kind of new technology or with other possible (6)*

Secondly, many of the organizations see that the future of textile industry is in recycling and reusing of materials. In addition to the environmental and social problems to be solved in textile industry, there are purely economic motives to develop textile industry to more sustainable and resource efficient direction, such as raw material self-sufficiency.

> *We see that the use of cellulose based textile material is increasing in the future. While we have a technology for this purpose, circular economy model enables the commercialization of the technology and adding northern scope back to textile industry. (7)*

> *There are many [commercial motives]. For instance, safeguarding of raw-material availability, price and location, including climate change and political risks - . It is also related to brand differentiation, both by sustainability and design. – There are also new business opportunities related collection, sorting, technology, pre-processing, and commercialization of textile waste - and hopefully possibilities for industry as well (8)*

Thirdly, in Finland the new law for textile waste took effect in the beginning of 2016, which prohibits dumbing textile wastes to landfills. Additionally, while partners have

noted the huge amounts of textile waste and dumped clothes having remaining value potential, the need for new solutions for textile waste have emerged. Today, the majority of textile wastes end up straightly to energy resource, and tons of clothes donated to charity are sent back to developing countries, where minority of clothes can be utilized.

> *We can manage the whole value chain of clothing until it becomes textile waste, but we need a solution to manage the textile waste also. – Sorting of textile waste is very labor and space intensive, - so we are very interested in the separate proceeding of textile collection and sorting possibly resulted by this project. (9)*

> *We have taken a community commitment to decrease the percent of textile waste as waste-to-energy resource. Textile waste is quite difficult to process as waste-to-energy resource and not that energy intensive either. We have many clients, who we want to provide new solutions for their waste management. (10)*

Furthermore, collaboration and knowledge sharing is motivating partner organizations.

> *When it is talk about circular economy model, you are very dependent on other operators. We did not have all the contacts needed, and now [via RFI] we have plenty of them. In circular economy is particularly about collaboration, instead of you alone with your own business idea, all the partners are involved in thinking, how to benefit together. Communality is very strong aspect here, - and it creates value added to everyone. I believe that everyone has learned a lot from this [RFI project]. (11)*

Circular model of textile production is not easy to build by one organization alone. Every organization needs help with one or more parts of the whole life cycle of textiles, in order to manage the entire value chain. Additionally, necessary information and contacts are needed to build a circular model of textile value chain.

4.4.2 Value creation and economic benefits of circular business model

Value creation concept

In addition to CE model, also determination of value creation was requested. Responds varied from purely economic value creation to concept of CSV. Some referred to value added resulting from the continuing efforts to create more value than the alternative product, i.e. the opportunity cost. Most simply value can be seen as price minus cost of raw material, i.e. the logistics, manufacturing and human capital needed for making the product and its value.

> *Our resource is another's waste. – We refine waste to create value. (12)*

> *Value is created by doing better than before, i.e. more profitably. (13)*

For some respondents value creation includes equally financial, social and environmental dimensions.

> *For us value creation comes with optimization of shared value, meaning that value is created from different perspectives, i.e. social, economic and ecological. - Optimization means balancing these different perspectives, and making difficult decisions between them. Maximization of all value perspectives is ideal, but not realistic in every case. - Additionally value should be created in three stages; for individual, community and world. Articulation and quantifying of social and ecological value is difficult or at least commonly considered difficult. Value creation is most commonly seen from economic perspective only. However, value is never inherently economic, which is the consequence of value creation, such as functionality of product. Ideally the value created has wider positive impact to society, and a cause and effect for profitable business. This is also the core idea of circular economy. (14)*

Value is also seen coming from brand and story- telling. Taking responsibility of environment and society is also seen as opportunity for economic value creation and brand differentiation. However, it is realized that value of responsibility is created by actions rather than by fine responsibility reporting. Moreover, in CE model, customer is seen to involve in value creation, by e.g. returning the product to circle.

Economic challenges and opportunities of CE

Economic profitability is an important part of CE and CSV, which are inherently economic thinking models working according to market-base principles. Thus economic challenges as well as opportunities and incentives related to circular model development and implementation where asked from the interviewees, in order to get an impression of the economic dimension of sustainability in CE model.

Economic challenges and barriers

Any major challenges specific to CE have not been confronted among the partner organizations, compared to any business development. However, the major concerns are related to business model development, cost efficiency as well as achieving economies of scale. Developing a whole new kind of business model and transforming from linear model to circular, requires significant investments, process changes and lots of R&D work. Moreover, concerns are related to lack of infrastructure, existing business models and financial investors in surrounding business environment. Building the whole ecosystem, operating models as well as finding capable and suitable actors are not a small tasks.

> *The fundamental principles are the same [than in any production], although the manufacturing needs to be changed a bit, new phases might be needed, and new subject needs to be considered. (15)*

> *We yet do not have the whole ecosystem for collecting the material. In the long run it should be like [procuring] any other material. Automatization of the process, e.g. sorting is challenging. (16)*

The cost efficiency, profitability and the price for the product seem to be the most worried issues in the RFI project. Regardless of how sustainable the product will be, the price should be, at some level, compatible with alternative products, in order to succeed. Producing durable, sustainable and higher quality products is mainly more expensive than producing single-use products. The costs to environment and society do are not calculated to the price of a product. Thus need for governmental incentives and support has been also raised. Additionally, the raw material, i.e. textile waste at the moment is cheap or even gratis, but the uncertainty of price development regarding the processing of material and increasing demand is concerning.

> *Cost will decide: How cost efficiently the model can be implemented. (18)*

On the other hand, the idea is not to sell bigger and bigger volumes with lower and lower price, but to compete with quality and durability and with complementary products and services.

> *We cannot probably compete with cheap import cotton products, and on the other hand we would not want to develop a niche quality and price product, which only few people could afford. – The value proposition should be carefully considered, and the other services and complementary products constructed around it. (19)*

Related to the cost efficiency, the scale advantage of future production was considered a lot. Most of the partners think that cost efficiency and profitability cannot be achieved without mass production. Nevertheless, it is seen that ideally also the production costs should decrease for some extent through efficiency gained in CE model. There are still challenges in some phases of the value chain, such as collection, sorting and preprocessing of the material, that need automated solutions and new business actors, in order to get the production to large scale.

> *The biggest challenge is in organizing the model. – Our production at the moment is so small, that costs per product are high. If the scale can be increased, the costs will come down. Development is*

> *always expensive, but in larger scale the costs are spread more evenly. (20)*

> *Conventionally, projects using recycled materials have been kind of twiddling and pottering, rather than economically rational business. We have had huge efforts for designing and scaling the production towards economically profitable business. For us design is very important, to make desirable, commercial and functional products, thus the marginal profit has stood quite strong. (21)*

Finally, price and market share depends a lot on the commercialization of the product and what is the overall consumer acceptance of using materials done out of textile waste.

Opportunities and incentives:

The major economic opportunities of CE model development and implementation are seen in brand, image and marketing value, resource safety and cost reductions as well as long-term business model for sustainable growth. Additionally, political incentives were mentioned. Corporate responsibility and sustainability are the words of today's business. Consequently, corporate reporting and marketing have given effort for these issues for quite long time, but the problem seems to lie in the lack of real actions. Brand is not only built with marketing and communication, but by actions. Thus the RFI kind of radical development of sustainable business models tells the stakeholders, that the organizations are acting seriously towards sustainable business. On the other hand, choosing always the cheapest suppliers instead of considering the sustainability of the choices might be quite risky for the corporate brand, if something reprehensible comes up in public. Moreover, at least Seppälä and Helsinki Metropolitan Area Reuse Centre have received positive public attention through the RFI project and collaboration with innovative partners such as VTT and Pure Waste.

> *Our clients are more and more willing to use recycled materials. - Of course it has brand and image value too. (22)*

> *A lot is to do with brand. In the future, people will be more and more aware of responsibility and sustainability of textiles and clothing. (23)*

Development of CE model is also seen as long-term investment for resource safety and decreasing production costs. The future of virgin cotton production is definitely uncertain. It is related to many environmental and social issues, such as shortage of water and nutrition. Additionally, most of the cotton production countries are emerging economies and politically unstable. Therefore significant cotton price fluctuations are anticipated especially in the long run. Furthermore, as the scale of circular textile industry gets larger, it is expected that the production costs become lower than of virgin material. As the textile waste is utilized the costs are saved in waste fees. By selling or using waste as raw material, it even has positive economic value. In addition, the resource safety is seen as one benefit of recycled material.

Thus CE is seen as long-term sustainable growth model. The partner organizations have recognized the growing demand of sustainable and durable products. Thus CE model is viewed to provide long-term competitive advantage, as it is a growth model equally in economic, environmental and social terms. Additionally the RFI project has recognized a need for collecting, sorting and preprocessing of textile waste, which provides totally new innovation and business opportunities.

> *The spirit of time is such that corporations must take responsibility and ponder the state of the Earth, and think about the challenges we need to confront. (24)*

> *The consumer will decide, and they are requiring more and more responsible actions from corporations. In the long-run this will also be economically more profitable. It is also corporates' task to enlighten consumers and increase the consciousness, while not all consumers are aware of these [sustainability] issues. (25)*

When asked about the economic incentives CE brings, some respondents thought about the political incentives or governmental support. In the RFI project political incentives and governments financial support is seen important especially in the development phase of CE model. While the linear model of business has been

prevailing for long time, the infrastructure and business environment needs fundamental changes to support the development. Although CE model is inherently economic and supposed to work in market principles, the respondents emphasized that many existing economic businesses and innovations also need political intervention in order to succeed.

> *You could hypnotize the question - if all the governmental incentives and financial support would be stopped - which businesses and industries would end up being lucrative? (26)*

Political interventions are suggested to demonstrate the environmental costs of virgin material use through e.g. taxation, and to promote and support the use of recycled material and more sustainable solutions. Supporting imports and exports of recycled and waste material, through for instance tariff reliefs was seen especially important for the implementation of RFI circular model. In addition, public procurement is seen as a powerful way to promote sustainable solutions, having economic as well as sentimental and communicational value.

4.4.3 Social value creation in CE and the importance in textile industry

The next discussion theme considered the social impact and CSV of the RFI project and CE model. The interviewees were first asked to define CSV in their own words, to get a view about the common understanding of the concept in practice. Furthermore, the social objectives of the partner companies were asked, and how CE model could respond to these objectives. In addition, some direct and indirect social consequences of RFI project and CE model in general were discussed. Finally, the current issues in textile industry and consumption were considered in the eyes of CE model.

CSV determination

The definitions of CSV concept showed that the concept is not clear to everyone, but rather vague and ambiguous. For some it illustrates value creation in collaboration, and for some, the concept brought in mind the concept of shared economy. On the other hand, some of the interviewees have quite similar view of CSV with Porter and Kramer, as creating competitive advantage by finding the social

impact opportunities from core business and competencies. From CE perspective, shared value created is seen in locality and collaboration, as well as effective reuse of raw materials for multiple times and purposes.

> *Shared value creation should be placed truly into core of business, rather than sprinkled to certain initiatives, to get kind of license to operate. It should be required from all business sectors and be part of all business decisions. – Otherwise, the business cannot fundamentally change. (27)*

The impressions of CSV relating to collaboration or shared economy are not wrong impressions at all though. In today's textile industry, brand owners have huge pressures to sell more and more for lower and lower price, which reflects to manufacturers' and sub-contractors' pressure to produce faster and faster with yet cheaper materials, resulting lower and lower quality of clothes in the end. These clothes have shorter durability and usability, and are usually not valuable in secondary markets.

> *Firstly, should be identified those which actors are involved in particular value creation. At the moment - if you own the factor of production, you take the risk and are eligible for all that value created. When we come to shared value creation, there is the question of how other actors are involved in that risk. (28)*

If the risk would be shared more equally, by so called downstream integration, and value would be created in collaboration with all actors of the value chain, probably better quality could be achieved with reasonable prices. Moreover, if the raw material and resources would be managed in CE terms, the cost effectiveness and raw material security would be surely achieved. Furthermore better quality of clothes could enable new kind of distribution and service models for clothes in shared economy principles.

CSV objectives

The majority of partner organizations do not have any specific direct social impact objectives. However, many of the organizations have taken actions, which are resulting social impact.

> *We are operating in India and China, and bringing wealth, ideas, opportunities and know-how to local villages, communities and territories. (29)*

> *Social responsibility comes from greater mission to strive global challenges towards better track. Corporations should challenge their customers to do good and to require better [sustainability]. (30)*

Many of the organizations actions and decisions are based on both economic, environmental and ethical aspects. Main themes discussed were related to working conditions, environmental actions, Finnish society well-being and responsibility of manufacturing. For instance PureWaste strives to be the best employer of India, VTT is driving Finnish society's industrial and commercial opportunities, and Touchpoint has 90% of its production in Estonia as well as empowering employment for female prisoners and disabled people in Finland. Still, all of the companies are operating in for-profit terms, with social and environmental values.

Social impact of CE model

Several direct and indirect social opportunities of CE model were identified by interviewees. Firstly, increasing awareness of sustainability among the whole society is seen one of the most important impacts. Awareness is achieved in two ways: to partner organizations through collaboration required in CE, as well as to consumers and other stakeholders by communicating the opportunities of CE. By collaboration partner organizations can share important information and networks, different aspects can be considered and a wider view of the whole textile industry and value chain is achieved. Additionally, partners may find synergies not only inside the project, but new co-operation opportunities as well. The RFI partners are expecting that enforcing a lucrative circular business model can inspire other

businesses as well, and increase the consciousness of materials in general. The better people are aware of quality and sustainability, the more probably they also buy better quality which can be better recycled. The weaker the quality is, the harder it is to recycle and utilize in multiple cycles.

> *The greatest and most desirable solution, which could be caused, would be increasing awareness. It is in the core of shifting the operations and culture. The more people would receive information and knowledge [about circular economy model], - it would cause a snowball effect, - reaching even more people and business actors, as well as resulting new business opportunities. (31)*

Secondly, the RFI partner organizations see that CE model provides a way to take responsibility of the whole life cycle of the product, especially in the end of use. Even though the RFI model does not directly solve the issues in the beginning of the value chain, i.e. cotton farming and production, it can indirectly affect it by for instance decreasing the demand for virgin cotton. At least it provides a solution for textile waste problem. For instance charities and recycling centers, receiving clothing donations, are suffering from high storage and disposal costs. Instead of inevitable waste management, CE model can provide new business opportunities for new value creation. Thus these non-profit organizations could have more resources to do good, and better quality clothes could be donated to those who need them.

> *Cotton farming consumes enormous amounts of water, and of course it includes risks of child labor and other various social problems. Soil could be used for food farming instead of cotton. This [circular economy model] would increase our opportunities to buy more sustainable materials, and decrease environmental stress. – On the other hand, textile waste as energy resource is quite poor, so reusing the material is more valuable. Tons of donated textiles are also shifted back to e.g. Africa. (32)*

Furthermore, interviewees believe that new business opportunities including effective and innovative use of raw materials and new service opportunities, create more employment opportunities than conventional linear model.

> *This [RFI project] would surely have employment opportunities. For instance, a task to sort what is still marketable as such, requires awareness of the fashion trends and consumer acceptance, and probably cannot be done by a machine or just anybody. (33)*

Fourthly, locality and Finnish innovation are considered valuable matters in RFI project. To begin with, the VTT technology as such will probably be launched and exported, bringing economic wealth to Finnish society. It has received lot of attention internationally and has potential to drive national competiveness, *if* it will be compatible and among the first of various other ongoing initiatives for textile circulation. Furthermore, Finnish products are given high value in Finnish culture, reflecting quality and reliability as well as employment opportunities to Finland. However, according to RFI's consumer enquiry, Finnish products are expected to be manufactured in Finland, and controversially the low price of product is emphasized.

It is still unclear, which phases of the circular value chain will be implemented in Finland. The ideal is to close the loop and create a business ecosystem, but Finnish production and labor is very expensive. On the other hand, interviewees point out that a closed loop should not be created at any cost, but to consider the entire social, environmental and economic costs, including e.g. energy use and logistic costs. The total impact of closing the loop should be carefully investigated, and CSV should be optimized, whether it requires to implement some phases in Asia or implementing the whole value chain in Finland. For instance, there is a risk of repeating the current social and environmental issues in emerging countries, with only a bit different operations.

> *The more important question is how it [circular economy model] affects the production structures. What kind of operations already vanished from here [Finland] it could bring back? (34)*

In conclusion, within one CE model, there can be greater and smaller, looser and tighter loops. There can be several local ecosystems or industrial clusters globally, which can create new industry and business opportunities, ideally resulting self-sufficient, knowledge sharing and innovative communities. The RFI project is on piloting phase, thus it is very hard to define the final impact, before the pilot has been launched and implemented to real business phase. However, these aspects should be carefully considered before the implementation and launching.

Why is it important to create CE model to textile industry?

Textile industry is one of the most problematic industries in sustainability point of view. The respondents see that value is not divided evenly in textile value chain. Cotton farmers and manufacturers bare the environmental and social costs, such as lack of water, exposure to toxic chemicals and inhumane working conditions, while the brand owners reap the economic profits. Fortunately, the awareness and markets have been developed into direction, where more and more consumers require fashion brands to take responsibility of the whole product value chain. CE model emphasizes the collaboration throughout the value chain, thus having potential to share the value more equally and increase transparency throughout the product life cycle.

In the case of RFI, there are no outlined objectives, which would respond to greater social and environmental problems of textile industry. The partner organizations expect the employment and competitive advantage opportunities in Finland, but cannot forecast the impact on current social and environmental issues in developing countries. Some interviewees pondered for instance the influence of circular model on the employment in cotton farming and manufacturing. The very path dependent impact can be direct or indirect and intended or unintended.

> *First time in 25 years, Europe's textile production is larger than in previous year. Some strange development is taking place that people do not accept anything, thus industry kind of needs to come back here. On the other hand, all the time there lays a question of where could even cheaper production be found. If [circular economy model] shifts the textile production here closer*

> *the consumer, what does it mean to Bangladeshi worker? Would it lead to dumping prices there even more? Or, could it lead to fortunate development, where they would also start to compete in quality? (35)*

Most importantly, all the partners are willing to develop more responsible and sustainable business models, and view that potential in CE. The solution for social and environmental issues in textile value chain is seen in common development with manufacturers rather than boycotting the unsustainable ones. Implementing CE principles of recycling, reusing and reducing, has no straightforward impact on the huge social issues of textile industry. Hence, adopting new business and thinking model as well as increasing transparency and awareness throughout the value chain have crucial role in optimizing the shared value creation.

What has CE to do with consumption?

Consumers have an important role in CE model, as they determine whether the product is acceptable and whether clothes are recycled. Based on the consumer enquiry conducted by RFI project and the interviewees' prospects in this study, some crucial facts related to consumers are found. Firstly, in order to enable the smooth circulation of clothes and textiles, recycling needs to become easy for consumers. Obviously, discount coupons for returning worn-out clothes to the store could serve as incentives. However, many consumers see it intractable, while clothes may easily be left home and stores are not visited that often. In RFI's enquiry easiness is central factor defining the recycle habits. For instance the choice of donation organization depends on the closeness of donation place. Additionally, lack of returning opportunities, especially for rags, is emphasized. Secondly, the collected amount of textiles is actually not the main problem, while donation organizations are already drowning with bad-quality clothes. Thus the modesty of consumption, repairing and modifying opportunities should be emphasized rather than recycling. The RFI enquiry revealed, that there would be demand for affordable modifying and repairing services or even courses, because many people do not have those skills and/or time nowadays.

Thirdly, one of the most important aspect, and already pointed many times in this study, is awareness. The RFI consumer enquiry reveals that most of the people desire to do ethical and ecological choices, but they do not have enough knowledge for that. Additionally, people still do not know what to do with their unused or worn-out clothes. Moreover, recognizing high-quality textiles is considered very hard. Therefore, there is a huge need for clear instructions about truly ethical and ecological procurement choices (set apart from greenwashing) and smart recycling. CE model for textiles can protest against fast fashion with higher quality instead of cheap prices and fast changing trends. However, it requires enlightened awareness from consumers, so that they can make better choices.

Nevertheless, the product needs to fill the same criteria than an alternative conventional product. Although consumers desire to make ethical and ecological choices, few are ready to pay more for social or environmental impact. Thus clothes need to be high-quality, fitting, durable, desirable and functional. With all these qualities the price can be a bit higher than that of cheap fast fashion, but affordable enough to be compatible. Hence, people need to be aware of high-quality and functionality in order to pay a bit more for the clothing. Here, modesty of consumption should be rooted deep into consumer habits, i.e. buying less with a bit higher prices, but high-quality, desirable and upgradable products. Consequently, this would also further CE development, while products with higher quality would circulate, and demand for variety of services would increase.

From consumer point of view, circular models such as RFI project have a huge potential to build brand value, while having an interesting and impressive story behind the product. The RFI consumption enquiry reveals that all the consumer groups are willing to do ethical and ecologic choices. Additionally, majority of consumers can be influenced by marketing and communication, so that the awareness and image of the product can be affected. In story-telling and brand building, consumer acceptability and desirability to recycled materials should not be taken for granted. In Finland, recycling is quite deeply rooted in our culture, but in other cultures launching of the idea should be carefully considered. In conclusion, recycled materials or ecological product should not be the only building blocks of

the brand. Different standpoints for value creation need to be considered and communicated, in order to reach as many consumer groups as possible.

4.4.4 Performance assessment

The final discussion theme considered performance measurement and reporting practices of the partner organizations. Firstly, the most important stakeholder groups and performance measurement practices were discussed. The main purpose of this theme was to look into social impact measurement among the organizations, thus questions regarding social impact assessment and shared value creation measurement were emphasized. Discussion regarded questions of how social impact is measured in partner organizations, the importance of measuring CSV and social impact as well as related challenges. Both individual organizations and the RFI project was considered.

Performance measurement practices in partner organizations

Performance measurement practices vary quite a lot between organizations, since the variety of their sizes and forms. As expected, the financial information plays a major role in all of the organizations as well as the RFI project's performance measurement. However, the practices range in the level of financial information provided as well as amount of environmental and social performance measurement. Many of the organizations are private SME's and are not obligated for reporting. Performance measurement is mainly conducted for decision making purposes and investors.

> *Our company is quite small, and our owners are deeply involved in the operations. They are reported to, but they are also well aware of the daily business. (36)*

Because of various lines of business partner organizations operate on, there are various stakeholder groups involved, ranging from consumers and households to public sector organizations and global supplier companies. The project is financed by Tekes owned by government, thus some reporting is required by Tekes. When the governmental organization is financing the project, there are usually also social intents and goals involved. However, the measurement and reporting of achieving

those goals is seldom required. Individually, partner organizations mainly report financials to their investors and owners as well as to the controlling authorities. On the other hand, many of partner organizations require regular social and environmental reporting from their suppliers and co-operators in order to assure sustainability of the whole value chain.

The internal performance measurement of partner organizations is mostly based on financials and customer or personnel feed-back. Regarding social initiatives, the follow-up is usually based on measuring working hours and money invested. Some use environmental measurements such as energy and water consumption or carbon footprint. Social impact measurement instead is rarely conducted, because of lacking knowledge and/or resources. Many of the interviewees see transparency and actions more important than social and environmental impact measurement and fine reports. Transparency can mean for instance, publishing the supplier factories in internet pages and being able to track the whole value chain of clothing, in case customer wants to know that.

> *We have the most important certificates to operate, though we think that the most important is to operate transparently rather than acquire all the possible certificates. (37)*

In the RFI project, performance measurement has mainly focused on the cost efficiency, since it is the precondition for launching the product and implementing the model in large scale. The social and environmental impact assessment is getting minor consideration because of the limited budget and time frame of the piloting project.

Measurement practices for social impact

When asked about social impact measurement in partner organizations, the most common answer was that there is no such assessment used. The reasons for this are mostly lack of resources, i.e. time, money and human capital, or lack of convenient measurement tools and practices. Measurement of social impact is seen very resource intensive, and many of the organizations do not have such resources. The sustainable development of operations is seen as a primary task, whereas the performance and impact measurement are seen as secondary. With limited time,

human resources and money, companies need to choose one task at a time from several development opportunities. Furthermore, the tools for social impact measurement are seen quite inconvenient. Gathering data for such tools is seen also very time consuming and requiring special knowledge. If the tools were easier to use and better data systems were available, the resources needed would not be necessarily that extensive.

> *We have measured for instance how much recycled material is used per product, but we are lacking a systematic way for impact measurement. (38)*

> *A good point, certainly those [social impacts] should be somehow verified. (39)*

However, some of the organizations have already taken some efforts to measure social impact. For instance Helsinki Metropolitan Area Reuse Centre has a calculator in their cash register system, which measures the natural resources saved per a recycled product. PureWaste has been developing social impact metrics, but needs further development in order to get commensurably relevant and comparable results. All of the organizations clearly see the need for social impact measurement, but also have faced many challenges. Some of the organizations are still fledging and need to put all the focus in making the business financially lucrative.

The need for and importance of social impact measurement

All the companies see the need for and importance of share value measurement though. Especially social impact assessment has received too little attention, partly because of the lacking tools and partly because of the resource challenges. The interest would be huge, but reflecting social impact results is viewed very difficult. While many of the organizations have also environmental and social intents, social impact assessment would prove the justification of the actions. Interviewees see, that it would help steering and managing actions, telling if those are taking the right path. Measurement results would give concrete information both internally and externally about the impact of actions, for management as well as for investors for example.

> *To give grounds for actions and business. ROI-thinking is quite common. (40)*

Measurement of CSV and converting social and environmental actions to financial value creation received lot of interest. Interviewees recognize, that the value potential is not probably assessed entirely, if CSV is not measured. Rarely, impact of social or environmental value creation is taken into account in economic value creation. On the other hand, if value to society is measured, the exports and economic benefit to society are often emphasized. Additionally, in circular model the division of shared value would be interesting.

> *It would be interesting to see the division of shared value creation throughout the circular value chain compared to the linear model, where the economic value creation is mainly collected in the tail end of the value chain. (41)*

Converting social and environmental value creation into financial metrics is mostly seen as a good thing, although some concerns also occurred. The importance is seen for instance to draw funding. Even though there is growing group of investors seeking for sustainable investment targets, the economic profitability usually still plays the major role. Converting the social and environmental value creation to financial metrics would help both managers and investors to evaluate and interpret sustainable investments. Additionally, it would be important to companies to change their social and environmental impact into goodwill and turnover.

> *A goal of for-profit organization is not only to be a good corporate citizen but also sustainably profitable. Pragmatically these questions always return to economic performance measurement. (42)*

Controversially, there is a question of whether the social impact can be monetized. Nevertheless, the significance of social and environmental sustainability in long term value creation should be somehow concretized to companies, before it is too late.

> *The common understandings of what is wellbeing, safety or sustainability are quite tacit questions, not easy to monetize. To*

> *company those questions usually become concrete, until the unsustainable production can no longer be continued, and at the same second the question becomes fatal. (43)*

The challenges for CSV assessment

The major challenges of measuring CSV are in social impact measurement. That is the complexity of social impact assessment, the problem of indicating social value, the time phrase of measurement as well as lack of resources and knowledge. Firstly, social impact is generally viewed so complex and multidimensional issue, that it cannot be explicitly defined or measured. Social impact can be caused by various actors simultaneously and in a long time period. Moreover, it is hard to tell which of the actors have been proactive and which reactive. Thus it can be very hard for organizations to define what part of the impact is caused by company's specific actions and which part is consequence of other's actions or purely general progression. In addition, many organizations have quite wide networks, so all the impact achieved through those networks is hard to tell, and on the other hand what parts of that impact should be measured, regarding both the negative and positive impact.

> *Nothing comes from absolute void, and nothing ends up to specified explicit and clear ideal. (44)*

Secondly, social impact measurement particularly confronts problems of indication. Somehow social intent, transparency and impact should be segregated, though. Social intent is a good start, but it should be somehow indicated in order to assess, how well the intended impact has been achieved. Transparency is very important principle, but it does not necessarily cover the entire impact of actions, which could be measured. However, the interviewees were pondering questions, such as what could be the metrics and unit for social impact. Concerns, whether quantitative measurement of qualitative issues would over-simplify the results are stressed. Even though quantitative results give more concrete information, those do not necessarily tell anything about the increased wellbeing or happiness for instance. On the other hand, qualitative data is considered quite difficult to apply generally

comparable. Furthermore, many interviewees pointed out that all the social value creation cannot be measured in monetary units.

> *It should be noted that not everything is measurable in euros. (45)*

The complexity and multidimensionality of social impact is also reflecting to the indication problems. Some interviewees stressed the difficulty of finding link between cause and effect. Social impact is not necessarily caused by direct influence, while it can be achieved through environmental or economic impact. How to connect and measure indirect or even unintended consequences to company's actions?

> *There can be certain development paths that our actions had influence on, but it is hard to tell what size and form the influence has occurred. (46)*

Thirdly, the time phase of measurement is especially difficult in social impact assessment. In addition to the fact that impact can be indirect, unintended and multidimensional, it can reach far to the future. In relatively short time period, which is quite common to projects, the whole impact might not been realized yet during the measurement time phrase. On the other hand, as the measurement time period is lengthened the direct impact becomes harder and harder to recognize from surrounding progression.

> *It is easy to measure, e.g. how much employing one socially excluded person saves costs of society. But, how to measure for instance the influence of recycling one kilo of cotton waste on water purity in ten years? (47)*

Finally, caused by challenges mentioned above, interviewees estimated huge resources needed for social impact measurement. Time, money and knowledge needed for such data gathering and measurement are lacking, especially in SMEs. On the other hand, larger companies are required for extensive reporting and certificates, thus lacking resources as well. With unlimited resources, all organizations would probably try to develop social metrics and data system. While there is lack of knowledge of both how and what to measure, many of the partner

organizations would need generally accepted, easy to use and well-designed measurement tools.

As the RFI project is on the piloting phase and has very limited resources of time and money, no measurement of CSV has been performed. The performance of the project will be mainly evaluated by the financial metrics and feedback from the partner organizations. This is primary impact evaluation, but the secondary impact, such as impact to society is hard to evaluate. Moreover, the project was originally set for six months only, so the short time period would not enable that extensive measurement anyway. Nevertheless, there would be interest to measure the shared value created by whole CE model and per individual partner organizations. This complicated task may be considered in future research. Finally, some needs for measurement tools and public data systems have occurred specially from the RFI project. For instance, there is a need for a public data system about the collection rate of textiles, which would help to measure the impact of reducing and reusing textile waste. RFI project is focusing on cotton textiles, thus it would be important to measure its impact on overall masses of textile waste. The solution could be a same kind centralized organization that for instance paper industry has in Finland.

4.5 Summary of empirical findings

This chapter has analyzed the CSV in the RFI project by reviewing the theme interviews of partner organizations. Evaluation of CSV in the RFI project has proven quite difficult task, while the project is on the piloting phase, and the final form of the circular model is not in place yet. There still remains many open questions about how the model will be implemented and what kind of new businesses would be needed in order to secure the principles of CE model and CSV. The total impact of upcoming circular business model is impossible to forecast. Thus, apart from the opportunities already achieved by the partner organizations, only estimations about the CSV opportunities can be stated in this study. This subsection concludes the empirical findings by reviewing the RFI through three principles of CSV; social needs, redefining value chain productivity and stakeholder involvement.

To begin with, findings indicate that RFI model could definitely serve some social needs. The main principles of CE is to save resources and create value from waste.

Potentially, in large scale RFI could impact the most critical social issues, such as lack of water and nutrition, as well as health issues caused by the increasing level of pollution. These impacts however are quite long-range prospects. It is quite difficult to estimate how a single business model implementation such as RFI could actually respond to the most critical issues of textile industry, i.e. environmental harms of cotton farming or factories' inhumane working conditions in the beginning of the value chain. The more direct impacts instead are easier to anticipate. New business opportunities can create new job opportunities to Finland and decrease the unemployment rate. Even disadvantaged and long-term unemployed people could be employed with the expertise of Helsinki Metropolitan Area Reuse Centre. Lucrative businesses and increasing exports can foster national economic growth, and hence social wellbeing in Finnish society. If some of the production will be done in developing countries, wellbeing of local communities can be directly affected following the example of PureWaste's factories in India.

Secondly, value chain in RFI has been well considered as stakeholders from different lines of textile industry have been involved. Already now, partner organizations have gained extensive knowledge and prospects about the textile industry. Furthermore, synergies between the organizations' operations have been found. However, the model is still lacking some critical actors to fill the gaps in circular model. New technology and businesses are needed to solve for instance sorting and preprocessing textile waste. On the other hand this opens outstanding opportunities for new innovations and businesses. Additionally, locations of circular model's different phases are still open questions. To solve these questions all aspects of CSV need to be considered. The production costs need to be compatible and profitable for all partners, but not with the cost of social and environmental issues. There is a real danger of repeating the same falsities than in the conventional linear textile production. Also the sustainability of every partner organization's supply chains and subcontractors should be carefully reviewed.

Furthermore, the partners have also recognized that the whole potential of CE model is not solely in using recycled material. A more extensive aspect of sustainable value creation should be applied through design, supply chain, distribution channels and complementary services. For instance, the value of

clothing should be maintained as long as possible, by designing high-quality products with timeless design, providing repairing, upgrading and rental services as well as educating users for taking care of their clothes. Multidimensional value creation and sustainability should be criteria for all decision-making. Repack as a partner, for example provides a more sustainable packaging system for clothing deliveries both to customer and back to circle. By different sustainable value creation solutions, partner organizations can achieve long-term competitive advantage and brand loyalty.

Thirdly, stakeholder involvement in terms of Finnish cluster development might not be possible for RFI, while Finnish infrastructure does not enable large scale textile production and the labor costs are high. Fortunately, today's information and communication systems provide possibilities for communication and control in global scale. In order to assure sustainable operations as well as common principles and goals, all the RFI partners including their suppliers need to commit to transparency, close collaboration and communication. This does not mean, that brand owners are setting the codes of conduct, but finding the best practices for the whole circular value chain through dialogue and joint development.

However, the importance of sharing diverse prospects and knowledge among stakeholders has been recognized in RFI. What is more, the consumer enquiry has been essential for product and process design. At the same time, user involvement is fostering constantly growing awareness about CE and sustainable consumption among society. If successful, RFI can promote and attract also other industries to adopt alternative sustainable business models. Moreover, driving infrastructure development towards circular model might also require political actions. Launching RFI model most probably requires some radical changes in existing political interventions and legal structures, while those are mostly established on linear processes and for supporting predominant industries.

In conclusion, the opportunities for CSV are mostly dependent on how the future business model of the RFI will be designed and implemented. Obviously, VTT's clean-tech innovation itself has a huge value potential, but then it depends on the circular model design and implementation around this kind of cleaner technology, that how much shared value it can actually create. That is, whether the value of

resources and products can be maintained sustainably as long as possible, in the means of optimizing the shared economic, social and environmental value. Furthermore, the indirect opportunities for social impact will probably be emphasized, which brings challenges to social impact measurement. The next step for RFI implementation would be to clearly define the CSV goals and find the best processes and tracking systems for impact assessment.

5 DISCUSSION & CONCLUSION

This study examines the shared value creation possibilities in circular business model. Sustainability has for long time prevailed as an inevitable global megatrend, whereas circular economy model has gained a lot of attention lately as a potential sustainable strategy in both business and national policy context. While financial and social interests have traditionally viewed juxtaposed, the CSV concept has shed light on the interconnectedness of social, environmental, and economic value creation. Even though CE model has been prevalent in existing eco-industrial literature, it has had little contribution to social wealth creation. Thus this study has especially focused on the question of what is the potential of circular business model to optimize the economic, environmental and social well-being in the means of CSV principles. Additionally, this study has reviewed existing measurement and reporting practices for shared value creation, while assessment of social impact have been found especially challenging.

This study contributes to the existing literature by extending the CE concept's value proposition with social dimension. The study scrutinizes the opportunities and challenges of CE model, and provides empirical evidence from circular business model implementation in piloting phase. Furthermore, the empirical evidence shows practical implications of CSV concept and assessment. The findings of this study indicate that CE model possess huge potential for CSV, but requires radical changes in current thinking models and systems. The earlier literature and findings of this study are reflected in the following discussion.

5.1 Discussion

The findings of this study show that theoretically CE model provides huge potential for CSV, as the principles of CSV and CE theory are quite congruent. However, the practical implications are not that straightforward. Much of shared value potential depends on how CE model is designed and implemented as well as how well CSV concept is understood. The views of case companies support the earlier documentation of CE (e.g. Geng & Dobersterin, 2008; Su et al., 2013; Sitra, 2015a; 2015b; The Club of Rome, 2015; George et al., 2015; Witjes & Lozano, 2015) that the main direct opportunities of CE seem to be resource efficiency and waste

utilization, new opportunities for employment, business and innovation as well as promotion of sustainability and socio-economic well-being. For even more radical change, the indirect impacts might be emphasized such as influence to global warming or third world's humanitarian distress, but case companies find those hard to assess, especially at the piloting point of circular business model.

Achievement of CE model's potential also confronts several challenges. The empirical findings support the literature on CSV (Emerson, 2003; Porter & Kramer, 2011; Pavlovich & Corner; 2014) and on sustainable business models (Yunus et al., 2010; Demil & Lecocq, 2010 Rauter, 2017), that traditional value proposition and business models need to radically change. In practice, this means rethinking of traditional supply chains, location, productivity and distribution strategies (also noted by Porter & Kramer, 2011). Findings not that for CE model especially, design of products by circular principles, creating new services, sharing of resources and knowledge and finding synergies between organizations (also noted by Delft University's research, 2014) are essential. On the other hand, empirical findings recognize the threat of current market systems, mainly based on cost-efficiency and short term goals. The economic realities need to be confronted and CE model's outputs need to compete in both cost-efficiency and sustainability, in order to become mainstream product. These findings support Andersen's (2007) concern, that only limited range of CE opportunities might be exploited by businesses, unless there is fortitude to make radical changes in conventional thinking.

Furthermore, empirical findings show vagueness in common understanding of the key concepts: value creation, CSV and CE. Hence, practical implications of revolutionary CSV concept are not straightforward, like the critique of Crane et al., (2014) and Dembek & Singh (2014) has stated. Lack of common understanding might lead to position, where individual preferences and perceptions guide, missing important shared and multidimensional nature of value (noted by Kenter et al., 2015). On the other hand, evidence shows that close collaboration within the circular model can foster knowledge and prospect sharing between partner organizations. To achieve the whole potential of CE in shared value means, the findings emphasize that all stakeholders are the building blocks of value creation, like Argawall et al. (2015) have stated. Therefore, the findings indicate that clear agenda, long-term

commitment mutual risk bearing, dialogue and accessibility as success factors for collaboration (stated by Kanter, 1999; Prahalad & Ramaswamy, 2004; Porter & Kramer, 2011) would be essential to CE model as well.

Moreover, empirical findings supports the earlier literature that more conscious and responsible consumption (Ghisellini et al., 2016) and a market paradigm shift (Pavlovich & Corner, 2014) are required for transformation towards CE and shared value creation. Some researchers have stressed the lack of public awareness (Su et al., 2013) and CE model's inability to address problems of current consumption models (Hobson & Lynch, 2016) as barriers for CE model's success. However, the findings suggest that proactively implemented circular business model can actually increase the public consciousness for sustainability among citizens and businesses. Hence, increased consciousness perhaps is one of the major factors of CSV in CE model.

In coherence with earlier documentation on CE (e.g. Geng & Doberstein, 2008; Su et al., 2013; Seppälä et al., 2016), the empirical findings show that current state of infrastructure and technology is not ideal for circular business, and thus the commercialization of its outputs is costly and challenging. Driving a systematic change from linear to circular is not a small task, and hence requires massive resources, new business and technological innovations and possibly political intervention. Thus, the findings of this study slightly differ from Porter's & Kramer's (2011), who see CSV to work purely market-based. As Porter & Kramer (2011) state, the capital market need to change, thus the political incentives and regulation need to be redirected to support new sustainable business models such as CE.

One of the major challenges in CE implementation is to make shared value visible. The findings confirm the researchers' view, that performance measurement in shared value means confronts several challenges, such as lack of knowledge, resources, common tools and databases, especially for social accounting (e.g. Emerson, 2003; Chatterji & Levine, 2006; Geng & Doberstein, Syrjä & Sjögren, 2015). However, there is huge motivation for shared value creation assessment arising from both internal decision-making and external reporting. While the variety of impact assessment practices and certifications is decent, the findings support earlier research (e.g. Emerson, 2003; Chatterji & Levine, 2006; Bovens, 2007), that

standardization of resource-efficient and user-friendly practices and data bases would be essential. On the other hand, there lays a question of whether anything is or even should be measurable. Thus, the experiences of case companies suggest that principle of transparency is even more important for accountability. This verifies the findings of Bovens, (2007), Arvidson (2010) and Syrjä & Sjögren (2015). The actions make the change, not reports. Finally, evidence of this study reveals that in most cases the economic drivers dominate performance evaluation, even when social and/or environmental purpose is involved. In consequence of neglecting the inseparability of three value components, the whole potential of CSV may not be explored.

Consistent with earlier literature (Porter & Kramer, 2006; 2011; Nidumolu et al 2009), the findings from this empirical case study reflect that organizations are realizing the inevitability of transformation towards shared value principles and sustainability, thus wanting to engage in change. For instance, resource safety and building strong sustainable brand are motivations for CE model development. While the awareness of environmental and social constraints is constantly growing, those are increasingly becoming economic realities. Current efforts for socially and environmentally sustainable business models are seen as investment for future long term sustainable economic growth. In fact the evidence of this study finds that people are inherently motivated for sustainability, but current market mechanisms, capital models and infrastructure are slowing down the change. Implementation of disruptive innovations or business models such as CE model confronts remarkable challenges, because the business environment is mainly based on linear consumption model. Cost-effectiveness is currently driving the competition, which makes investments and massive changes in processes less tempting. However, those who bear the costs of change now, will most probably run the competition in the future.

5.2 Evaluation of reliability and validity

According to Riege (2003), the quality of case study should be established on criteria used both in quantitative approaches (construct validity, internal and external validity and reliability) as well as qualitative approaches (credibility, transferability,

dependability and confirmability). Without corresponding qualitative criteria, using merely traditional design tests could lead to suppression of meaningful insights and thus not maximize the quality of research (Riege, 2003).

To improve the construct validity and confirmability of this study, theoretical background has been constructed of multiple sources and research fields. The empirical data has been gathered from all parties of the RFI in order to gather all perspectives of the case. Additionally, consumer enquiry conducted by RFI has been reviewed. However, it should be acknowledged, that data based on one-to-one interviews might include biased, proactive or manipulated responses and withhold information. In order to mitigate the risk of misunderstanding, interviewees have been asked to review the research results to confirm that their responses have been interpreted correctly.

As the purpose of this study is not to find statistic causalities between occurrences, internal validity and credibility are strived to achieve by explaining the research progress without gaps. Additionally, the research results have been gathered by firstly interviewing and analyzing case-participants one by one and secondly by cross-analysis for a more holistic view. It should be also taken into account, that while interviews settings are unique, the exact replication is not possible, and hence the external validity and transferability of the study are limited.

Even though, the study has been conducted as objectively as possible, author's subjective assumptions and opinions inevitably affect the results for some extent, and hence might have an effect the reliability and dependability of this study. However the interview structure and research methods are reported, and the same themes have been covered with every participant. Moreover the interviews were recorded so that the database is obtainable and empirical results are not based on author's subjective memory and associations. Finally, a piloting project as a case study particularly affects the results, which are based on interviewees' assumptions and experiences being impossible to verify within the time-phrase of this study.

5.3 Limitations and directions for future research

The several limitations of this study provide implications for further research. While the empirical results of this study are based on piloting phase of circular business model, it would be extremely interesting to examine how the results of this study apply in wholly implemented model. As noted, social impacts can be far reaching, thus a research setting with more extensive resources, could enable data gathered from long time period and wider context. Additionally, evidence of shared value performance measurement in practice would be very useful. Furthermore, more empirical evidence from CSV research field as well as from CE in business context would be more than welcome. Finally, this study is the first one examining the CSV opportunities in circular business model, thus more evidence is needed to provide broader view of the occurrence.

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APPENDICES

Appendix 1. The theme interview

Relooping fashion projekti ja suljetun kierron malli

- Miten käsitätte kiertotalouden mallin?
- Mikä on teidän yrityksenne rooli tässä Relooping Fashion –projektissa?
- Miksi lähditte mukaan tähän projektiin? Motiivit?
- Toteutetaanko yrityksessä laajemmin kiertotalouden mallia?

Taloudellinen arvonluonti kiertotalouden mallissa?

- Mikä on teidän käsityksenne arvonluonnista?
- Mitä haasteita kiertotalouden malli tuottaa ”perinteiselle” arvonluonnille?
- Mitä taloudellisia kannustimia kiertotalouden mallin toteuttamiselle on?

Jaettu arvonluonti ja yhteiskunnallinen arvonluonti

- Miten määrittelisit (omin sanoin) jaetun arvonluonnin käsitteen?
- Onko teidän yrityksellänne yhteiskunnallisia arvonluonnin tavoitteita?
- Miten kiertotalouden malli vastaa näihin tavoitteisiin?
- Mitä suoria yhteiskunnallisia mahdollisuuksia kiertotalouden malli antaa?
- Onko kiertotalousprojektilla ollut työllistävä vaikutus? Entä tulevaisuudessa?
- Ovatko mallin eri osapuolet tuoneet potentiaalista lisäarvoa yrityksellenne?
- Entä millaisia epäsuoria vaikutuksia kiertotalouden mallilla voi olla?

Mittaaminen ja raportointi

- Sidosryhmät ja raportointi
- Mitä sidosryhmiä tunnistatte yrityksenne lähipiiriin?
- Keille näistä sidosryhmistä mittaaminen ja raportointi kohdistetaan?
- Miksi juuri näille sidosryhmille on tarpeellista raportoida?
- Mittaaminen
- Onko yhteiskunnallisen vaikutuksen mittaamiselle/raportoinnille tarvetta yrityksessänne?
- Miten yhteiskunnallista vaikutusta arvioidaan teidän yrityksessänne?
- Miksi yhteiskunnallisen vaikuttavuuden mittaaminen on tärkeää?
- Mitä haasteita koette yhteiskunnallisen vaikuttavuuden mittaamiselle?

- Olisiko teidän yrityksellänne tarvetta lisätä yhteiskunnallisen vaikuttavuuden mittaamista/raportointia?
- Entä onko tarvetta jaetun arvon arviointi- /mittaamistyökaluille, eli taloudellisen ja yhteiskunnallisen vaikuttavuuden yhtäaikaiselle arvioinnille?
- Millaisia mittaamis- ja raportointityökaluja käytätte tässä projektissa? Miksi? (Yrityksen sisällä? / Yhteisesti projektissa?)
- Onko mittaaminen tuottanut haasteita projektissa?

Tekstiiliteollisuus

- Miksi on tärkeää luoda kiertotalouden malli juuri tekstiiliteollisuuteen?
- Mitä epäkohtia tekstiiliteollisuuteen teidän näkökulmastanne liittyy?
- Miten Relooping Fashion -projektin malli vastaisi tekstiiliteollisuuden laajempiin ympäristö- ja sosiaalisiin ongelmiin?
- Näettekö kertotalouden mallille ja VTT:n kehittämälle teknologialle mahdollisuuksia laajemmin/globaalisti tekstiiliteollisuuden alalla?

Kuluttajat/asiakkaat

- Mitä lisäarvoa kuluttajien/asiakkaiden näkökulmasta kiertotalouden mallilla tuotetut vaatteet antavat?
- Ovatko kuluttajat/asiakkaat valmiita maksamaan enemmän näistä tuotteista?
- Millä tavalla kuluttajia/asiakkaita sitoutetaan kiertotalouden malliin?