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Master of Science in Economics and Business Administration, International Marketing

Typology of Circular Economy Models and Competitive Advantages: A case of Apparel Multinationals

Syed Ahmed Tajuddin

Supervisor: Mohammad Bakhtiar Rana

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Executive Summary

The circular economy model allows firms to adopt business models which implement regenerative system using closed material and energy loops in production for achieving economic and environmental sustainability. The study aims to focus on the competitive advantage perspective of circular economy model from the international marketing point of view. This thesis aims to develop the typologies of Circular Economy Model and also intends to explore how the typologies create value and competitive advantage in international market for apparel multinationals.

Qualitative data analysis technique has been taken to analyze the secondary data collected for the study. Five case companies, i.e. H&M, Inditex, Bestseller, C&A, and Lenzing have been chosen for the study based on some distinctive criteria. The data analysis used some self-generated and some literature generated analytical frameworks.

The study has proposed five broad categories and nine sub categories of Circular Economy Models (CEMs). The research has found that, CEMs create value and competitive advantgae in different cross border settings for apparel multinationals. The study also identified the value chain activities of CEMs those contribute to the Value and Competitive Advantage creation on different typologies of CEM.

This thesis has endeavored to contribute to the circular economy literature by proposing CEM types of global apparel multinationals. It has also added novel contributions to the value creation and competitive advantage theory in relation to circular economy. The CEM typologies and the value and competitive advantage creation model can also be helpful for the practitionars of this discepline while taking internationalization decisions in circular economy perspective.

Keywards: Circular Economy Model; Circular Economy Typologies, Apparel Multinatinals, Value Creation, Competitive Advantage.

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PART I

Chapter 1: Introduction

1.1 Introduction

Circular Economy (CE) is a newly emerged concept that has already gained an exponential interest from the scholars of all fields within the sustainability paradigm. It represents a paradigm shift of human society's interaction with nature aiming the depletion of resources and closing the energy and material loops in order to facilitate sustainability through its implementation at micro, meso and macro levels (Prieto-Sandoval, et al., 2018). "A circular economy aims to redefine growth, focusing on positive society-wide benefits, it gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system" (Ellen Macarthur Foundation, 2017). It is a broad concept that encompasses system level economic, social as well as environmental aspect while focusing on the sustainable use of resources, materials and energy (Husgafvel, et al., 2018). The scope and the significance of Circular Economy as an economic activity is getting so wide that some scholars are predicting its emergence as a new paradigm beyond the sustainability paradigm. Although it is too early to declare CE as a separate paradigm considering the theoretical maturity of the concept and wide acceptability over the industrial practices. However, recent studies proved CE as an important economic actor that does not merely work for a firm as a responsibility mechanism, rather appeared as an economically viable actor. The idea of CE business models started gaining popularity as a realistic alternative of sustainable business model during 2010s and on top of that Circular Economy can also be a source of competitive advantage for the firms competing in a highly competitive market (Better World Fashion: Circular Economy and Competitive Advantage , 2019). Circular thinking creates a sustainable competitive advantage for companies (Wautelet, 2016). In addition, firms embracing the circular economy principles are found among the fastest growing in the economy (Ellen MacArthur Foundation, 2015).

Circular Economy is an alternative to traditional sustainability practices for firms as it provides economic benefits to the firm while serving the environmental sustainability. Among all the industries, the need for circular economy is the highest in global apparel industry considering the environmental as well as economic point of view. This industry is the second largest polluting

industry after oil and responsible for 10% global carbon emission (Conca, 2015). The industry is also a leading one in greenhouse gas emission. The textile industry emits 1.2 billion tons of greenhouse gas annually while the washing of the garments, some of which releases half a million tons of microfibers that contributes to ocean pollution which is 16 times more than plastic microfibers from cosmetics (Anon., 2017) . Along with the environmental loses, the global apparel industry also loses value of more than 500 billion USD due to the underutilization and lack of recycling (A new textile economy, 2017). Circular economy model can be a potential solution to the environmental as well as economic loss of the global apparel industry. Some leading apparel multinationals like H&M, Inditex and Bestseller have already adopted circular economy models with a view to achieving environmental as well as economic sustainability. From the business point of view, these expectations from the circular economy model has generated a research need of studying circularity practices of apparel manufacturers. In addition, a good number of studied have already been conducted on circular economy in recent time, however, the number of studies on apparel industry is very low which also provides a motivation to study the circular economy model of apparel industry. Although the pioneer firms have started to adopt circular models and market following firms are following them, there are no clearly defined models of circular economy that firms can follow to get success. Which means, there are no theoretically recognized models or typologies of circular economy in global apparel industry. Although Ludeke-Freund et al. (2018) developed a detailed typologies of circular economy model, it was an overall one, which is not focused or applicable to the apparel industry. This has created a research gap on the typology of circular economy models (CEMs) of apparel industry. A well-defined typology will help the firms of the industry to pick the best suited type according to their resource capability and corporate vision. Therefore, a comprehensive typology of CEM would be advantageous for the global apparel multinationals. This study wants to address this area and aims to develop a well-defined typology of Circular Economy Models (CEMs) of global fashion industry. This would be a unique contribution to the circular economy literature.

The circular economy model provides economic efficiency to the firms (Kirchherr et al. 2017; Geissdoerfer et al. 2017; Stahel 2016; Haas et al. 2015; Park et al. 2010; Peters et al. 2007) which paves a way of economic value creation. This value perspective is important from the international marketing point of view as the firms need to know the value creation areas before adopting an economic model like CEM. The economic value creation equals competitive advantages (Peteraf

and Barney, 2003) which justifies that, value drives competitive advantage and it is not always the resource sources that create competitive advantage (Sigalas, 2015). In the circular economy, firms also seek for value creation for achieving competitive advantage. Marketers should know the way how value and competitive advantage is created in each CEM types, so that they can prioritize the models as well as choose the best model for value creation and achieving competitive advantage. The existing literature on circular economy defined circular economy and mentioned the economic value creation in different ways but did not show the way of creating value and competitive advantage that has created a research gap. Hence, marketers need to know how CEM creates value and competitive advantage and this study aims to address it.

Considering the need for developing a typology of circular economy models and their contributions to value and competitive advantage creation, the study has identified the following statement as the major research problem.

How many types of CEM are there in apparel business and how they create value and competitive advantage in markets?

In order to address the above-mentioned research problem, the study will try to develop the typologies of circular economy models (CEMs) and the study will also try to explore the value creation and competitive advantage creation areas of apparel multinationals adopting circular economy models. Thus, the following research questions are formulated to address the research problem.

1. What are the different types of circular economy models in global apparel industry?
2. How circular economy model is changing the value chain of apparel multinationals?
3. How circular economy model creates competitive advantage in international context?

The first research question will be answered by developing a well-comprehensive typology of CEM of global apparel industry. The need for developing the typology is already addressed. The typologies will be developed by exploring all the circular economy practices and business models followed by the case companies. After collecting the information on circularity practices of the firms, they will be aggregated and categorized and then the typology will be developed. The study will also explore the value chain activities of the case firms in order to unbundle the new value chain of circular economy model. This will be answered by the second research question. The third

research question covers a broad area which requires several frameworks to address. Since the study is conducted from international context, it is important to address the core areas of the study from the cross-border context. Competitive advantage creation for a firm depends on different advantages and factors which is gained from both local and foreign markets through the management of internalized and externalized bodies. These should be addressed in the analysis of CEM's competitive advantage creation. Dunning's (1979) OLI framework is a suitable analytical framework in this regard which addresses, how companies derive competitive advantage in international context in respect of ownership advantage, location choice and internalization based on value chain activities. Therefore, the OLI framework will be used to analyze CEM's competitive advantage creation using value chain activities in cross-border context. In addition, the analysis will address how value chain activities create competitive advantage for the lead firms and suppliers from demand and supply sides. Lastly, it will also address how different sustainability forms help to achieve competitive advantage in different circular economy models. This is how the third research question will be addressed.

Five case companies have been selected to conduct this study. The case companies are **H&M, Inditex, Bestseller, C&A, and Lenzing**. These companies are among the leaders in adopting circular economy. Details of case choosing criteria have been discussed in methodology. The study will be conducted using the secondary data which will be coded and analyzed in a comprehensive way to extract the findings. The sustainability reports of the apparel multinationals are the major sources of the data required for the study. Apart from this, some other secondary sources will also be used in this study. The details of the data collection, analysis procedures and findings extraction process will be discussed in the methodology chapter.

The study will be conducted in four parts. The first part of the study comprises the methodology and the philosophical position of the thesis. The second part of the study presents the literature review where the literatures related with the Circular Economy Model, Value Chain, Business Model, Competitive Advantage and Internationalization literatures related with the prime theory focuses of the study will be presented. The third phase of the study presents the analysis and the discussion of the study. The findings of the study, conclusion and the reflection of the study will be presented on the last part of the study.

Chapter 2: Methodology

2.1 Introduction

This chapter presents the methodology of the study. Methodology of any research describes the research organizing and conducting procedures. This organizing activity is defined as arranging it as an integral system which is supported by clearly defined characteristics that follows a logical structure with a process of realization and the temporal structure (Novikov, A.M,and Novikov, D.A. (2013)). The methods of the research, the research design and the philosophical position of the study will be presented in the section. The methodology starts with the discussion of philosophical position of the study. This part tries to match with the philosophical assumptions of the study in relation to the realities of the knowledge and the world. This chapter will also discuss the research design covering the research process and data collection procedures. Methodology of the study follows following process,

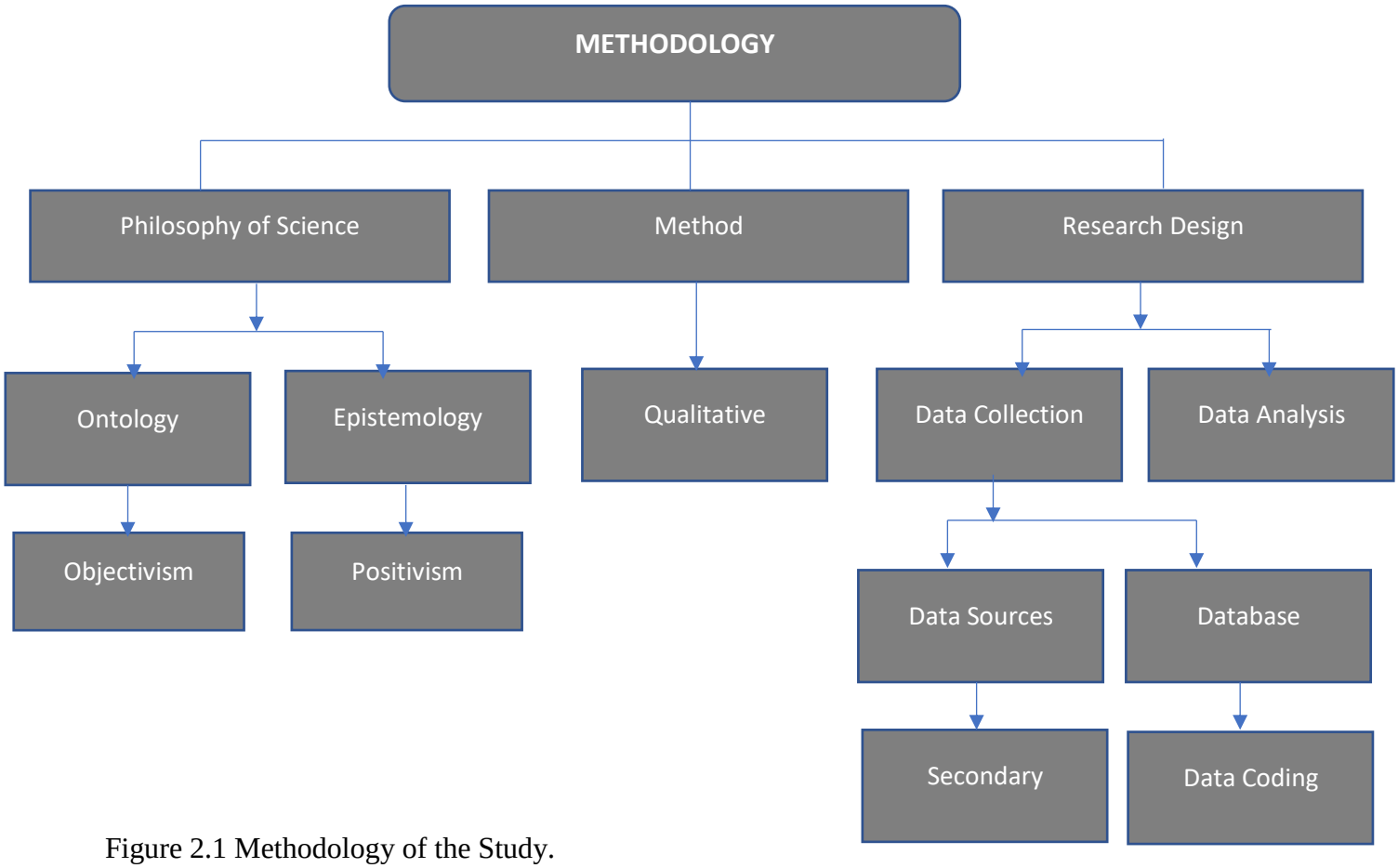

Figure 2.1 Methodology of the Study.

2.2 Philosophy of Science

Philosophy of science is the study of scientific knowledge creation. Beckholdm (2018) defined philosophy of science as a mean through which scientific knowledge is produced, Substantiated and used in society. It facilitates the subject knowledge and also facilitates in the application of the knowledge in the relevant fields (Beckholdm, 2018). Philosophy of science shows the writer's commitment towards his philosophical stand. The research methods and the execution are influenced by the philosophical position of the researcher. It requires that, a researcher should have a prior knowledge of ontology, epistemology and methods of the study conducted. Prior philosophical standing on the ontology, epistemology and methodology allows the researcher to conduct the study from a philosophical point of view that doesn't contradict with other philosophical standings and it is also helpful for the readers in terms of understanding of the research. It is important for the researcher to have a clear understanding of the constructs he or she tries to explore and the approach of the research of answering the research question which is explained in the ontology and epistemology assumptions of the researcher (Kuada, 2012).

2.2.1 Ontology

Ontology refers to the belief of the researcher regarding the reality of the world outside. According to Gruber, "An ontology is an explicit specification of a conceptualization" (Corcho, O. (2005)). There are two sides of ontology assumptions, i.e. Objectivism and Subjectivism. Objectivist philosophy refers one single reality of the world and the Subjectivist philosophy paradigm holds multiple reality that is developed by the perception and action of human being (Kuada, 2012). As this research follows positivist paradigm which leads towards taking single reality that is independent of the researcher and the result can be generalized, this study adopts objectivist ontology (Saunders, M., Lewis, P. and Thornhill, A. (2009)).

2.2.2 Epistemology

Epistemology guides us the way of gaining that knowledge. Kuada (2012) defined epistemology as "how we know, what we know". It represents the nature of knowledge and truth of knowing it. It is already declared that the ontology of the study is objective which means no chance of biasness out of researcher's belief. Thus, epistemology of the study is positivism. The positivist paradigm tries to uncover one single reality of research area by collecting and analyzing data. This study collected data about the circular economy practices of the apparel MNEs and based on the data the

study will develop the typologies of CEM and will also uncover the relationship of CEM and Competitive Advantage from the value chain perspective. There is no chance the analysis and finding will be influenced by researcher's individual belief as it is a data driven work.

2.3 Study Method

Research method explains the research technique adopted for the study. The study is conducted taking qualitative technique as the research method. The study aims to explore the data required for the study adopting qualitative method for data collection. The study is exploratory in nature. Exploratory research traditionally follows the qualitative approach (Gilbert A. Churchill & Lacobucci, 2005). Bryman and Bell (2007) stated qualitative study as a strategy that indicates the relationship between theory and research that helps theory building. This is a case study analysis research which is a type of exploratory research (Gilbert A. Churchill & Lacobucci, 2005). The study analyzed multiple case firms as it is advised to go through data of multiple cases to see the 'big picture' (Gilbert A. Churchill & Lacobucci, 2005). The case study analysis used the benchmarking techniques for data analysis. Benchmarking suggests taking one or more organizations as benchmark who excel at some function and the best practices are used as a source of ideas (Gilbert A. Churchill & Lacobucci, 2005). The study analyzed H&M, Inditex, Bestseller, C&A and Lenzing. As H&M is the leader in circular economy adoption in terms of CE activities, investments and involvement, this farm is considered as the benchmark.

2.4 Research Design

Along with the research method deciding on the research design is also necessary. Research design represents the structure of the research. It is a framework or blueprint of conducting the research which describes the procedures of collecting required data that help the researcher to solve research problem Malhorta, 2010). This section clarifies the research process and data collection and analysis procedures.

2.4.1 Research Process

A well-structured and step by step procedure is taken for conducting this study. It follows a seven-step procedure of conducting research. The research steps are as follows,

No.	Steps	Execution
Step 1	Objectives Identification	Objectives of the study are to develop the circular economy typologies of apparel multinationals and explore the value and competitive advantage creating areas of CEM.
Step 2	Problem Definition	A problem was defined to conduct the study. The main problem statement of research was set as, How many types of CEM are there in apparel business and how they create value and competitive advantage in markets?
Step 3	Conducting Literature Review	Related literature review was conducted to preview the previous literature relating to the study and research gap. Literature review haven been conducted on literatures related to Circular Economy Model, Apparel Value Chain, Circular Business Models, Competitive Advantage and OLI Framework.
Step 4	Determining Data Need	The research problem and the research questions created the data need. The required data were collected from different secondary sources.
Step 5	Developing the Database	After finalizing the data need a detail and comprehensive database has been prepared. Data have been collected by following some predetermined data collection procedures.
Step 6	Qualitative Analysis	The database was used to conduct the qualitative data analysis. Different qualitative analysis techniques have been used to analyze the data.
Step 7	Decision making	With the data analysis and hypotheses testing the research has got some concrete findings which is used for the research decision making.

Table 2.1 The Research Process

2.4.2 Data Collection

This section presents the data collection procedures of the study. Details about data collection are presented below,

2.4.2.1 Types of Data Sources

Researchers generally rely on two types of data, i.e. Primary Data and Secondary Data. Primary data include the data collected by the researcher to address the research problem and the secondary data are the data which is already collected by some other bodies other than the researcher for purposes other than the current problem at hand (Malhotra, 2010). This study is conducted on the secondary data sources.

2.4.2.2 The Database

A database has been prepared that is based on some selected secondary data sources. The database is used to conduct the analysis of the study. The database was prepared using following secondary data sources,

1. Company Sustainability Reports of 2017 and 2018.
2. Company Annual Reports 2017 and 2018.
3. Official Home Pages of the Companies.
4. Official Sustainability Home Pages of the Companies.

Database preparing procedures are presented on the following sections.

2.4.2.2.1 Selection of Case Companies

This study is conducted on five case companies. All the companies are taken from the same industry to generalize the results from industry's context. Some criteria were followed to select the case companies. They are,

1. Companies should be from Apparel Industry.
2. All the companies need to be multinationals having operations across the globe.
3. Companies adopting circular economy model and following the principles of circular economy across the value chain.
4. Data on circularity practice are available on publicly accessible domains.

5. Companies partnering Ellen McArthur Foundation (who are currently playing a leading role in implementing circular economy worldwide) in Circular Economy.

2.4.2.3 Data Coding

A structured data coding procedure was followed to code the data required for the study. The data coding procedure is discussed in following sections.

2.4.2.3.1 Determining the Data Need

The research problem, research question and initial data collection determined the data need for the study. The research questions and the research problem were converted into some key words. The key words are, CE Types, Value Creation, Competitive Advantage, Apparel Multinationals, Internationalization. After this, an initial data collection on circular economy was conducted. This includes the reading some sustainability reports and reviewing literature regarding circular economy. The initial data collection procedure helped to determine the final data need that supports the research problem and research question. Six value chain activities were selected after going through the benchmark firm and literatures basing on those the company wise data will be collected. The value chain activities are,

1. Design
2. Sourcing
3. Production
4. Logistics & Distribution
5. Product Use
6. Reuse & Recycle

Along with the value chain activities the column headlines were selected with the use of literatures and initial data collection outcomes. The main column headings are as follows,

a. CEM Type (Brad Type, Narrow Type)
b. Circular Business Model
c. Value Chain Activities
d. OLI Factors
e. Competitive Advantage Winner

f. Sustainability Achievement
g. Demand and Supply Side Competitive Advantage
h. Additional Information
i. Data Sources

2.4.2.3.2 Data Entry Technique

The database was prepared using Microsoft Excel sheets. Each sheet was maintained for one single case company. Particular information regarding the data heading was searched in the data sources and then the relevant data was put in the database. There is an additional column with every data heading where supporting information are entered collecting from the data sources. This supporting information are stored for referring during the data analysis. In multiple cases data were verified using cross checking methods among the sources. This was done to ensure the authenticity of the data. In some cases, data on a particular case firm were collected from multiple sources. In order to keep traces of the data, source is mentioned on the last column of every data sheet.

2.4.3 Data Analysis

Data analysis is easier when there is a well-defined data base. This study also experienced a smooth analysis backed by a well comprehensive database. Circular Economy Typologies were developed after analyzing the circular business models and practices adopted by the companies. In order to answer the research questions the rest of the analysis were conducted using some analytical frameworks which have been prepared with the help of literatures and the data collected for analysis. The database headings, under which the data are collected are also supported by the frameworks. The frameworks have been presented on the literature review chapter. The analytical frameworks used in data analysis are, OLI Framework in CEM Typologies; Competitive Advantage and CEM Typologies; Sustainability Attainment and CEM Typologies.

2.5 Reliability and Validity of the Study

"Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings" (Saunders, M., Lewis, P. and Thornhill, A. (2009)). Reliability and validity of any study is a major methodological issue for the data driven research. This study was conducted using qualitative methods backed by secondary data. The analysis of the study developed typologies after studying case firms which complies with the scholarly methods of typology developed. The frameworks used for analysis are backed by the established literature of international business field. These justify the reliability of the methodology of the study. Data collected for conducting the study were taken from valid secondary sources. Data sources are already published in accredited platforms and accepted by the peers and critics of the industry. These make the data used for this study valid.

PART II

Chapter 3: Circular Economy MODEL and Apparel Value chain

3.1 Introduction

The traditional linear economy of "take-make-dispose" is filling up the world with trashes and consuming the finite raw materials collected from the nature. This model is something against the nature's law. In nature nothing is wasted. Every natural production comes with a natural consumption. It is a production and consumption cycle with a closed loop. This is the reason why nature has zero waste. Inspired by the natural way of production and consumption as well as moved by the environmental and economic losses a new economic concept has emerged which creates an economic cycle with a closed loop. Which is circular in manner. In this economy the growth is decoupled from the use of finite resources the nature produces through disruptive business models supported by circular use of materials and cutting down wastes. The circular economy concept has enormous impact on the value chain of any firm following the circular economy model. As this thesis is concentrated on the global apparel industry, it is also necessary to review the concept of Value Chain of Apparel industry. This chapter will define and conceptualize the Circular Economy Model and also conceptualize the Apparel value chain. Technically this chapter is a part of literature review. The structured literature review has been conducted on the next chapter.

3.2 The Circular Economy Model

The scholars tend to discuss the Circular Economy Model rather defining it. Research finds that, there is no commonly acceptable definition of Circular Economy (Kirchherr et al., 2017, Yuan et al. 2006). This study by Kirchher et al. (2017) can claim this with authority as they have worked with 114 definitions of Circular Economy. Although the concept is rooted into some classic theories, it is still evolving so it has a varied interpretation to different people. The idea of circular economy was first proposed by American economist Kenneth. E. Boulding (Herman *et al.*, 2001; George *et al*., 2015). The recent studies on circular economy are taken more seriously in this study as a lot of studies have been carried out by scholars on this area in recent times. Many definitions and influential research contributions on Circular Economy have been made by non-academic bodies (Kirchherr, et al., 2017). Kirchher et al. (2017) have referred different organizations and consultancy firms as non-academic bodies. Although this thesis terms these bodies as

"practitioners". These organizations are playing key roles in the promotion of the circular economy concept while scholars are as usual contributing to the theoretical development of the idea.

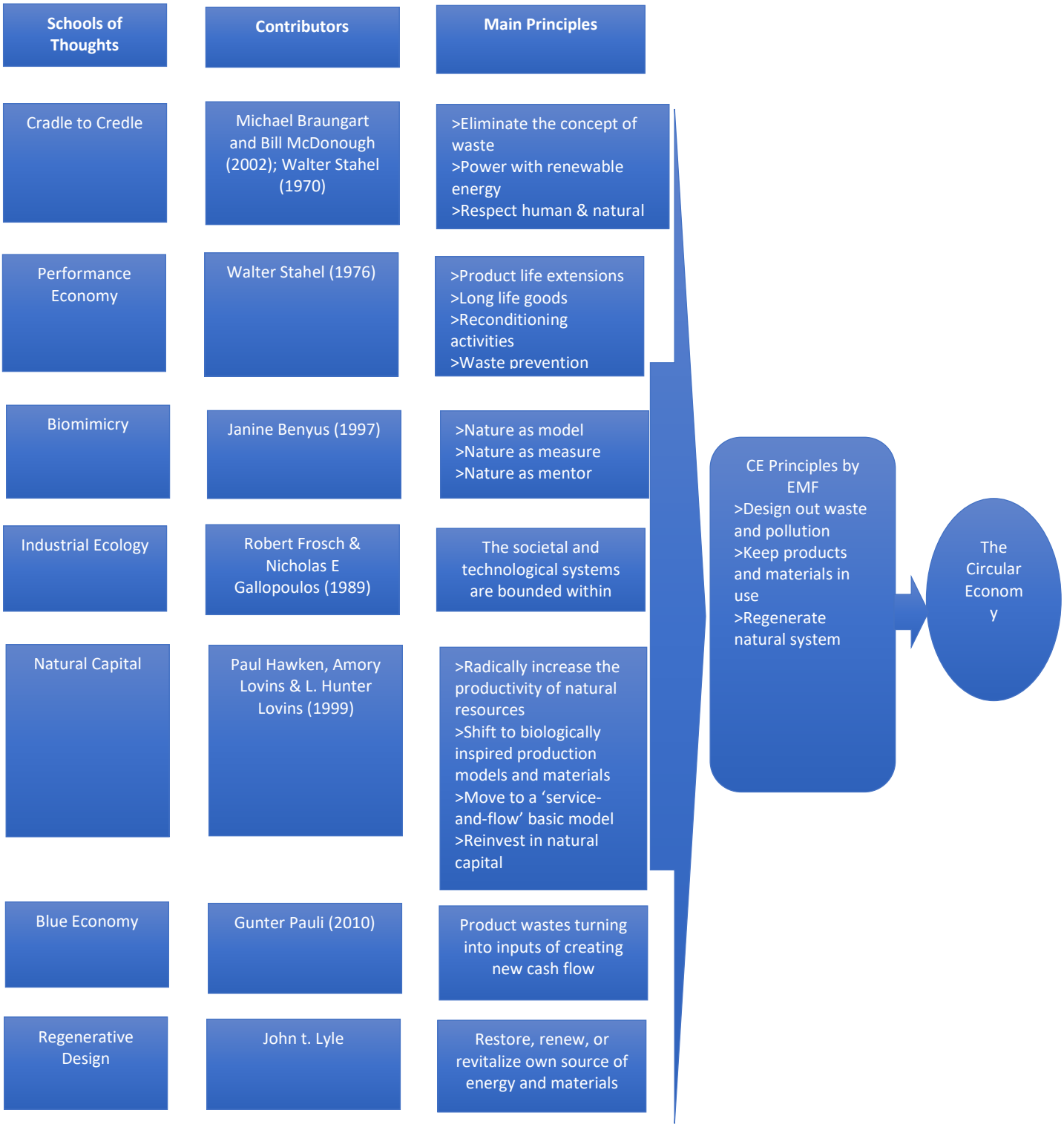

Figure 3.1: Evolution of the Circular Economy Model (Self-made, inspired by EMF, 2019)

The circular economy concept was actually evolved by the synthetization of various renowned school of thoughts. “They include the functional service economy (performance economy) of Walter Stahel; the Cradle to Cradle design philosophy of William McDonough and Michael Braungart; biomimicry as articulated by Janine Benyus; the industrial ecology of Reid Lifset and Thomas Graedel; natural capitalism by Amory and Hunter Lovins and Paul Hawken; and the blue economy systems approach described by Gunter Pauli” (Ellen Macarthur Foundation, 2017). The exhibit 3.1 presents the evolution of the Circular Economy Model from the previous schools of thoughts.

3.2.1 Circular Economy Conceptualization in Academic Studies

Circular Economy describes a world or a system where any product’s life is extended through repair, refurbishment and reproduction (Charter, 2019). It is a social and economic model that aims at social, environmental and economic gain. A rigorous study on the circular economy literatures have been conducted by (Prieto-Sandoval, et al., 2018) for conceptualizing the idea. The study has identified four main components should be included in definition of CE, the components include, (1) the recirculation of resources and energy while minimizing the demand for resources and value recovery from waste, (2) a multilevel approach, (3) means for achieving sustainable development, and (4) close ties with social innovation (Prieto-Sandoval, et al., 2018). Hence the definition of the circular economy would be the economic system that addresses the change of human society’s interaction with the nature aiming to prevent the deduction of resources with a close material and energy loop and achievement of sustainable development through this by implementing in every level (Prieto-Sandoval, et al., 2018). This definition of circular economy is a very wide one that aims to implement the concept at every level. It shows the formula of implementing circular economy at every level. This study is actually a synthetization of (Merli, et al., 2017). Merli et al. (2017) has also emphasized to implement CE at multiple levels. The study suggests following CE in three levels proposing three main line of action, i.e. implementing at micro level in social, economic and administrative level at first place, secondly implementing at micro level by spreading new forms of consumption and product design, and thirdly implementing at meso, industry level (Merli, et al., 2017). These research works are motivated on the point of implementing the CE concept on every area. Implementing the idea requires proper planning and management. The planning aspects of circular economy has been addressed by Murray et al., (2015). They defined CE as an economic model where proper planning, procurement, production,

reprocessing is designed and managed in both aspects processing and outputs to maximize the functioning of ecosystem for human well-being (Murray, et al., 2015). Some scholars have defined CE in detail. Geißdörfer et al., (2017) have provided a detail definition. They defined CE as a regenerative system where the use of resources, the wastes and energy erosion are minimized by slowing, narrowing and closing the material and energy loop (Geissdoerfer et al., 2017). The main idea of circular economy is closing the loop which is mentioned by almost every study conducted on CE. Some definitions of CE are focused on the sustainability paradigm. Many studies have proposed the ways of achieving the sustainable development through circular economy. Jesus et al. (2018) has defined circular economy as an approach of achieving the sustainable development goal which can be achieved through some strategies aiming at industry input minimization and proper maintenance of regenerative resources that includes ensuring efficiency while focusing renewable and non-hazardous materials, increasing the product life cycle and system reconceptualization through designing efficiency, reuse, repair, and recycling at the first place that is resource and waste minimization focused (Jesus, et al., 2018). Korhonen et al., (2017) have also defined circular economy from the sustainability perspective. They defined CE as a sustainable development initiative holding an objective of reducing the societal production and consumption system by applying material cycles, renewable and cascading energy flows in the traditional linear system (Korhonen, et al., 2018).

Prieto-Sandoval et al., (2018) have accumulated almost all explicit definitions of Circular Economy. This thesis has also reviewed the papers containing the definitions that Prieto-Sandoval et al., (2018) have accumulated. The definitions are presented on the following table.

Author/s	*Definition*
Kirchherr et al. (2017, p. 224)	"A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations."
Geissdoerfer et al. (2017, p. 766)	"a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. Second, we define sustainability as the balanced integration of economic performance, social inclusiveness, and environmental resilience, to the benefit of current and future generations."
Ghisellini et al. (2016, p. 16)	"Circular economy is defined by Charonis (2012), in line with The Ellen Macarthur Foundation vision (2012), as a system that is designed to be restorative and regenerative."
Stahel (2016, p. 435)	"A 'circular economy' would turn goods that are at the end of their service life into resources for others, closing loops in industrial ecosystems and minimizing waste. It would change economic logic because it replaces production with sufficiency: reuse what you can, recycle what cannot be reused, repair what is broken, remanufacture what cannot be repaired."
Gregson et al. (2015, p. 9)	"The circular economy seeks to stretch the economic life of goods and materials by retrieving them from post-production consumer phases. This approach too valorizes closing loops, but does so by imagining object ends in their design and by seeing ends as beginnings for new objects."
Haas et al. (2015, p. 765)	"The circular economy (CE) is a simple, but convincing, strategy, which aims at reducing both input of virgin materials and output of wastes by closing economic and ecological loops of resource flows." "CE, material flows are either made up of biological nutrients designed to re-enter the biosphere, or materials designed to circulate within the economy (reuse and recycling) (GEO5 2012)."
Ma et al. (2014, p. 506)	"A circular economy is a mode of economic development that aims to protect the environment and prevent pollution, thereby facilitating sustainable economic development."
Park et al. (2010, p. 1496)	"The CE policy seeks to integrate economic growth with environmental sustainability, with one element relying on new practices and technological developments, similar to the application of environmental modernization technology."
Xue et al. (2010, p. 1296)	"Circular economy is the outcome of over a decade's efforts to practice sustainable development by the international communities, and is the detailed approach towards sustainable development (Moriguchi, 2007)."
Yang and Feng (2008, p. 814)	Circular economy is an abbreviation of "Closed Materials Cycle Economy or Resources Circulated Economy" (…) "The fundamental goal of circular economy is to avoid and reduce wastes from sources of an economic process, so reusing and recycling are based on reducing."
Geng and Doberstein, (2008, p. 232)	"mean the realization of a closed loop of materials flow in the whole economic system." (…) "implying a closed-loop of materials, energy and waste flows"
Peters et al. (2007, p. 5943)	"The central idea is to close material loops, reduce inputs, and reuse or recycle products and waste to achieve a higher quality of life through increased resource efficiency."

Table 3.1 Definitions of Circular Economy (Source: Prieto-Sandoval et al., (2018))

3.2.2 The Circular Economy Model by Practitioners

Circular Economy Model defined by Ellen Macarthur Foundation

Definition

Among all the practitioners and organizations, Ellen Macarthur Foundation is one of the pioneers in circular economy. They defined Circular Economy as a model opposite to traditional take-make-waste model that focuses on society-wide benefits aiming towards growth where economic activity is gradually decoupled from the consumption of limited resources and designing waste out of the system (Ellen Macarthur Foundation, 2017). It also aims a transformation towards a renewable energy solution and building economic, natural, and social capital (Ellen Macarthur Foundation, 2017). The circular economy is based on three principles:

1. Designing out waste and pollution.
2. Keeping products and materials in use. And
3. Regenerate natural system. (Ellen Macarthur Foundation, 2017.)

This explanation and definition of Circular Economy focuses regenerating the natural system which is a waste less system. The idea aims on reducing the use of natural resources over time and building economic, natural and social capital based with a renewable energy solution. It means, the production system is not only reducing waste for environment avoiding the negative sides of take-make-waste linear economy, but also making a systems shifts towards tong-term resilience, creates economic opportunities while providing environmental and social benefits (Ellen Macarthur Foundation, 2017).

Building Blocks

Ellen Macarthur Foundation (n.d.) has identified four building blocks of a Circular Economy Model. They include Circular Economy Design, New Business Models, Reverse Cycles, and Enablers and Favorable System Conditions (Ellen Macarthur Foundation, 2017). *Circular Economy Design* requires to build core competencies by the companies facilitating reuse, recycling and cascading in manufacturing circular product where the product and process design need advanced skills, information sets as well as working methods along with material selection, standardized components, designed-to-last products, design for easy end-of-life sorting, separation of reuse of products and materials, and design-for-manufacturing standards that consider possible

use of by-products and wastes (Ellen Macarthur Foundation, 2017). Shifting towards a circular Economy requires *New Business Models* that either replace existing ones or resize new opportunities that encourage the mainstream businesses to go circular by leveraging their scale and vertical integration and these new models, materials and products will create a profitable circular economy which will motivate the other players to follow the circular economy and expand geographically (Ellen Macarthur Foundation, 2017). An effective Circular Economy needs *Reverse Cycles* for the final return of the materials to the soil or back towards industrial production system through delivery logistics, sorting, warehousing, risk management, power generation, and even molecular biology and polymer chemistry with cost-efficient, better-quality collection and treatment system and effective segmentation of end-of-life products (Ellen Macarthur Foundation, 2017). The whole circular industry requires some *Enablers and Favorable System Conditions* for ensuring a sustaining Circular Economy. The enablers include Collaboration, Rethinking incentives, Providing a suitable set of international environmental rules, Leading by example and driving up scale fast, and Access to financing (Ellen Macarthur Foundation, 2017).

The butterfly diagram on the next page developed by Ellen Macarthur Foundation describes the circular economy concept and principles.

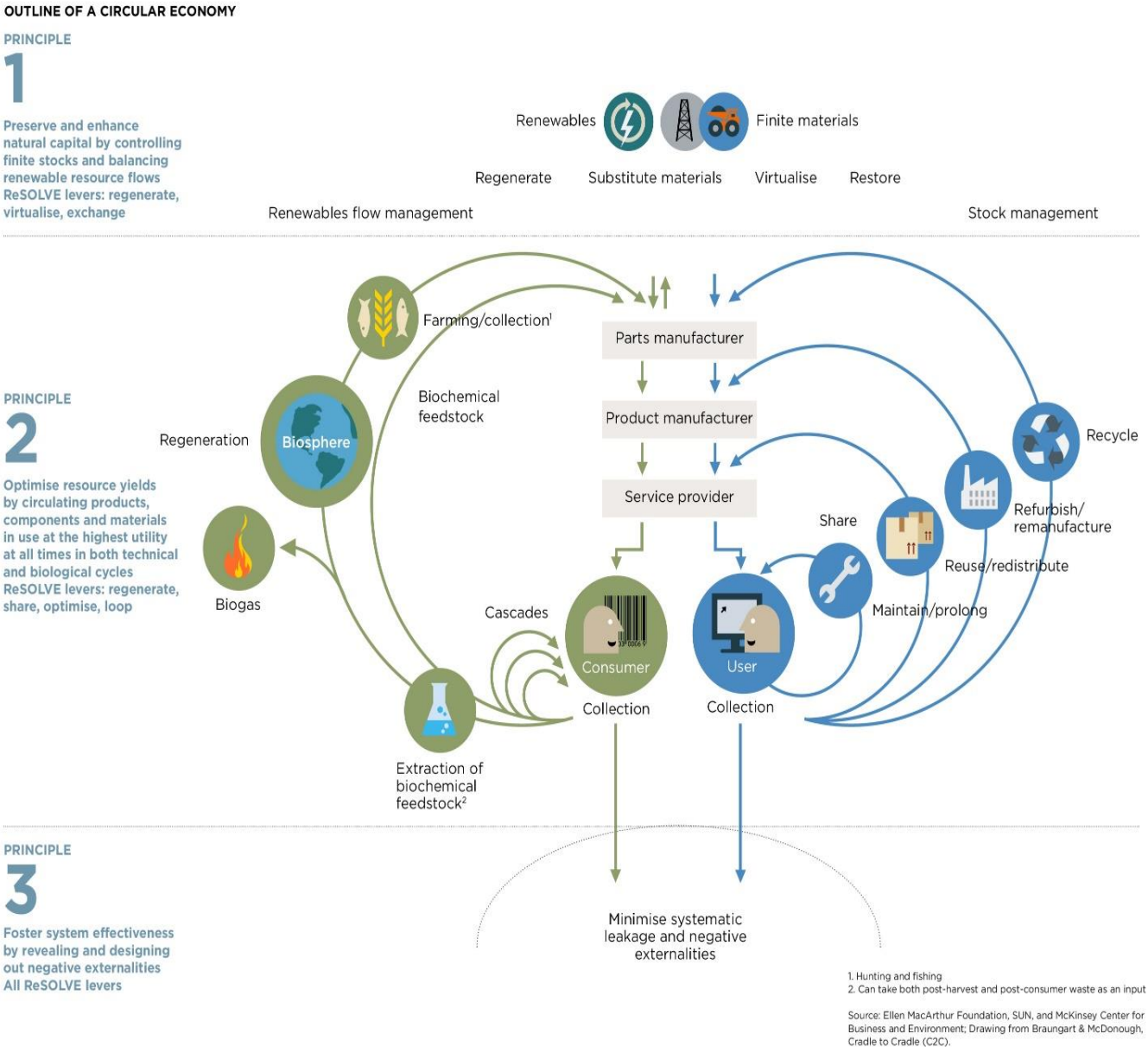

Figure 3.2: Outline of a Circular Economy (Source: Ellen Macarthur Foundation)

Circular Economy Model by Accenture

Accenture is a global management consulting, technology services and outsourcing company. Accenture is driving some significance amount of research projects relating to Circular Economy concept in collaboration with some of world's leading organizations. Accenture has some contributions to the Circular Economy concept which might be important to review in this part of the thesis that will help to conceptualize Circular Economy Model.

Accenture (2014) defined circular economy where growth is decoupled from the use of finite resources with the use of disruptive technology and innovative business models basing endurance, renewability, reuse, repair, upgrade, restoration, sharing, and dematerialization (Lacy, et al., 2014). Accenture have developed some typologies of circular business models based on some case companies. They have also identified some key technologies those are necessary for those business model. The technologies and the circular business models are presented on the next chapter under the discussion of circular business model typologies.

Circular Economy by Boston Consulting Group

Boston consulting group (BCG) is one of the pioneers of research and management consultancy in circular economy. They have been working with many global firms for facilitating circular economy. They have identified three types of circular innovations, i.e. Process Innovation, Product Innovation and Business Model Innovation in the report titled "The new big circle" (2018). The report also presents circular economy activities along with value chains. The following figure presents the circular economy activities along with value chain proposed by BCG.

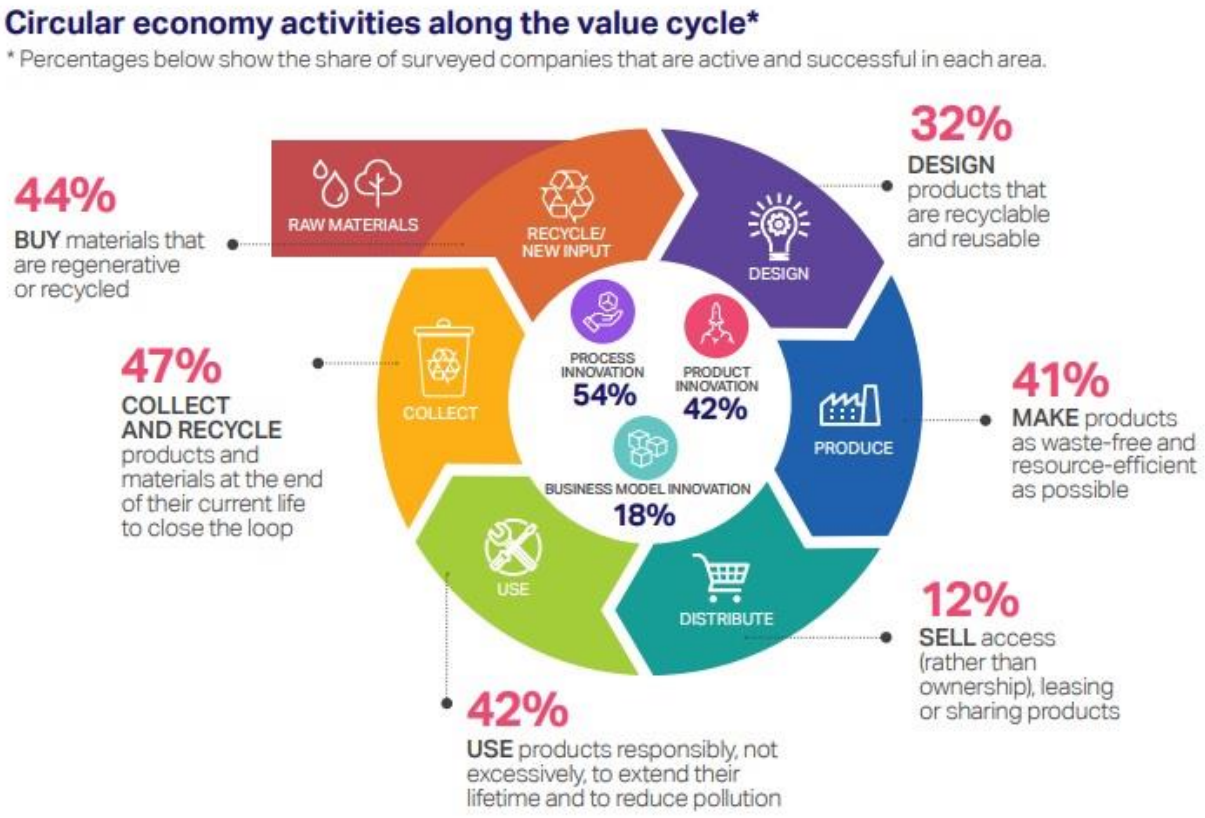

Figure 3.3: Circular Economy Activities along with the value chain (Source: (Blinda, et al., 2017))

3.3 Circular Economy Conceptualization

This thesis has reviewed more than 60 journal articles solely on Circular Economy. And this study has also reviewed research outputs and reports of different practitioners within the circular economy boundary. After reviewing all the literature, this thesis has conceptualized the Circular Economy Model and has identified some major components of Circular Economy and also come up with a definition of Circular Economy Model based on the components. The major components the thesis has identified after reviewing the literatures are,

A. Social and Economic Model
B. Economic and Environmental Sustainability
C. Closed material and energy loop
D. Regenerative system
E. Business model

Based on the reviewed literatures this thesis presents the following definition of Circular Economy Model,

Circular Economy Model is a social and economic model followed by business models implementing regenerative system using closed material and energy loops in production for achieving economic and environmental sustainability.

3.3 The Apparel Value Chain

It is necessary to have a basic understanding of the value chain before defining the apparel value chain. Value chain refers to the chain of activities those a firm performs for creating products of services to be offered at market. The 'Value Chain' terminology was popular after Michael Porter (1985) used this term in his book "Competitive Advantage: Creating and Sustaining superior Performance". Porter distinguished the vale chain activities and termed as primary activities and secondary activities. The primary activities are conducted to produce the product. They are grouped into five activities, i.e. inbound logistics, operations, outbound logistics, marketing and sales, and service (Porter, 1985). The secondary activities are conducted for improving the efficiency of the value chain and they support the primary activities. The supporting activities include procurement, technology development (including R& D), human resource management, and infrastructure (Porter, 1985). The generic model of Porter's Value Chain is as follows,

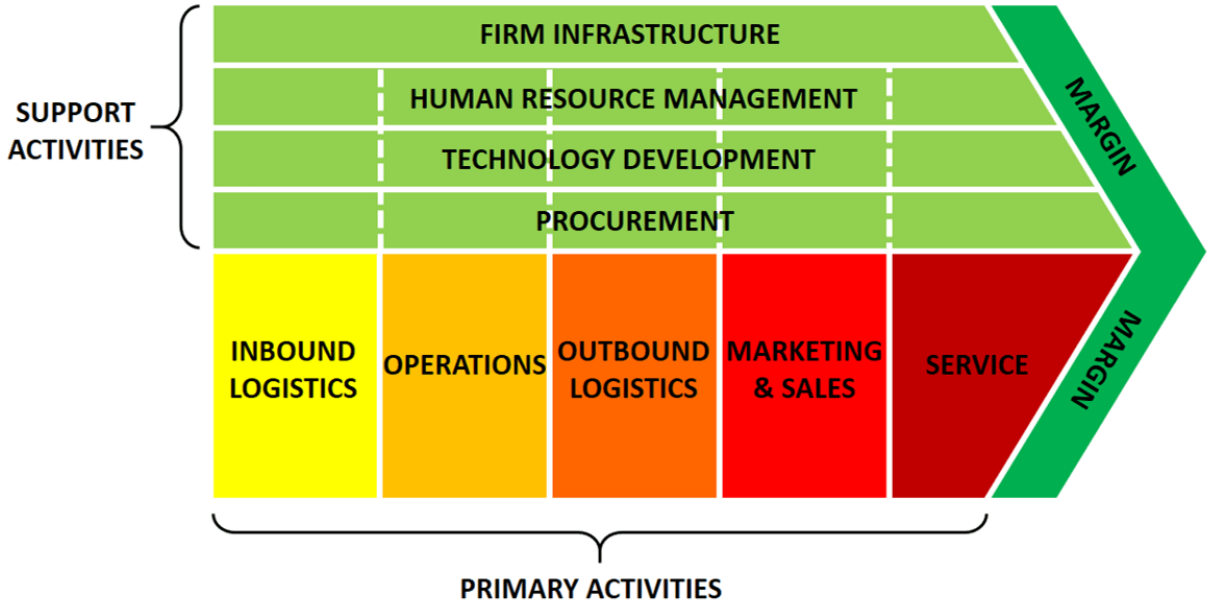

Figure 3.4 Porter's Generic Value Chain Model

Recent studies on value chain referred value chain as a series of value creating activities that increase value and overall worth of the product and service (Jaligot, Wilson, Cheeseman, Shaker, & Stretz, 2016). In general terms a value chain describes the total range of activities and actions including design, production, marketing, distribution and customer support to bring a product or service from the concept to the end use and beyond (Globalvaluechains.org, 2019). Value chain is very essential for the firms to identify the competitive advantage (Kaplinski and Morris 2000). It constructs the way the company is connected with the market (Morris, 2002). Value can be created through a value chain within the organization and outside the organization. Firms can collaborate with external partners to create a new joint value chain (Cova et al., 2011). Research on value chain have gone too far since Porter presented the idea in his book. Different dimensions have been added on the value chain model. The sustainability approach has been the prime one among the newly added dimension to value chain. In recent times or even since late nineties firms tend to consider the sustainability approach to value chain. Kaplinsky and Morris (2001) describes value chain as a complete range of activities required for producing a product or service that starts from the conception of the product to the final disposal of the product. They presented a framework containing four links including Design, Production, Marketing and Consumption/Retailing (Kaplinsky and Morris, 2001). WBCSD (2011) referred value chain as the full life cycle of a product or process that includes material procurement, production, consumption and disposal/recycling. WBCSD presents the following value chain model,

Figure 3.5 A standardized value chain model for sustainability (Source: WBCSD (2011))

The term value chain is often mixed with the supply chain or used interchangeably. The idea of supply chain and the value chain are not the same. A value chain has a broader area than supply chain. Supply chain simply transfers raw materials or products from one station to other station in a chained manner whereas, in value chain value is added at the different stages of the transfer and ultimately the product value is increased and maximized through the value chain (Reddy, 2013). The following figure presents a clear picture and distinguishes the supply chain and the value chain.

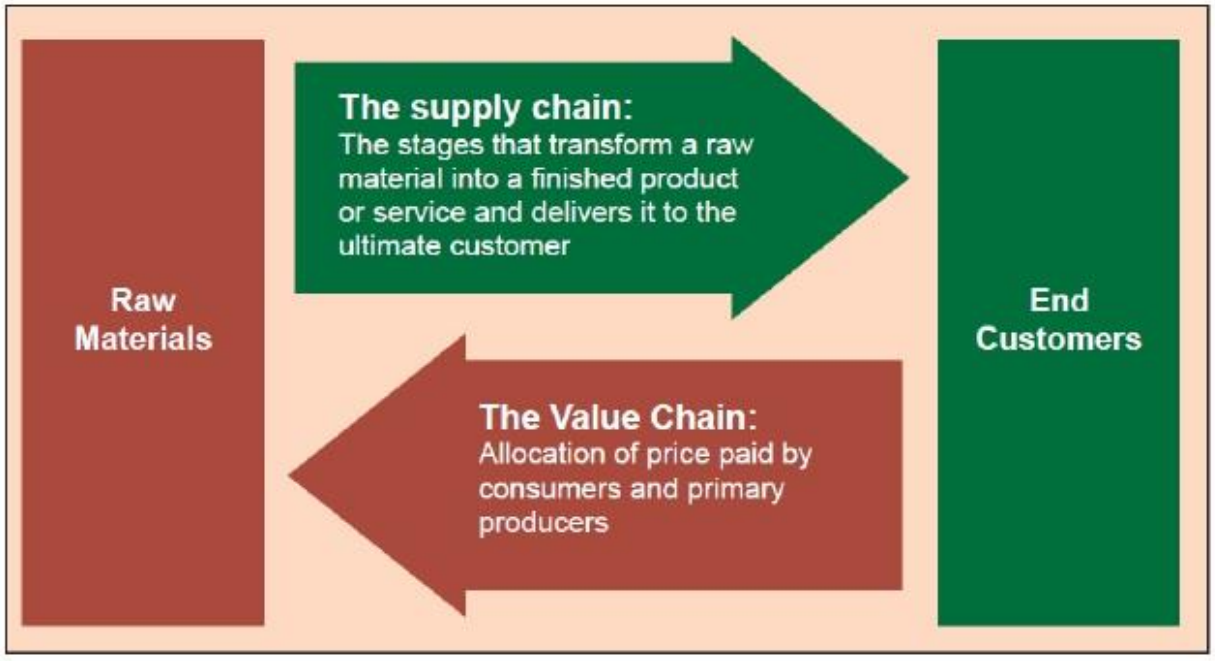

Figure 3.6 Supply Chain Vs. Value Chain (Source: Reddy, 2013)

A basic understanding of value chain is required to understand the apparel value chain. In clear terms, apparel value chain referred to the value chain used in the apparel industry. Apparel is a production industry where value chain is used to add value in different stages of the value chain. Apparel value chain has apparently been the global apparel value chain as the supply chain and the value chain both are spread globally for the apparel companies. Low cost countries like Bangladesh, Cambodia, Sri Lanka, Vietnam, Indonesia, Honduras, Nicaragua and Peru has become major exporting countries and became a major part of global value chain (Athukorala and Ekanayake, 2017). This was also synthesized by (Gopura, et al., 2016). This study stated that modern “apparel value chain” involves value chain members and actors of different industries in different developed and developing nations such as India, Malaysis, HK Special Administrative

Region (SAR), China, Turkey, Brazil and Mexico (Gopura, et al., 2016). Almost all studies on apparel value chains are focused on global apparel value chain. This means apparel value chain is unofficially being replaced by the term global apparel value chain. Gereffi and Memedovic (2003) mentioned that, the global apparel value chain is comprised of four components, i.e. textile raw material supply, manufacturing, transport and logistics and marketing (Athukorala and Ekanayake, 2017). There are two types of value chains, i.e. "produce-driven" and "buyer-driven" (Gereffi & Memedovic, 2003). In producer-driven value chain, large, transnational manufacturers play the central roles including forward and backward linkages and on the other hand in buyer-driven value chain large branded manufacturers play major roles in the chain (Gereffi & Memedovic, 2003). In apparel value chain the buyer-driven value chain is most likely present (Gereffi & Memedovic, 2003). The apparel value chain is consisted of five major parts, i.e. raw materials supply, provision of components, production, export channels and marketing (Gereffi & Memedovic, 2003). The beauty of global apparel value chain is, most important activities in the value chain are design, branding, and marketing not the manufacturing (Gopura, et al., 2016). A detail framework of apparel value chain is presented below,

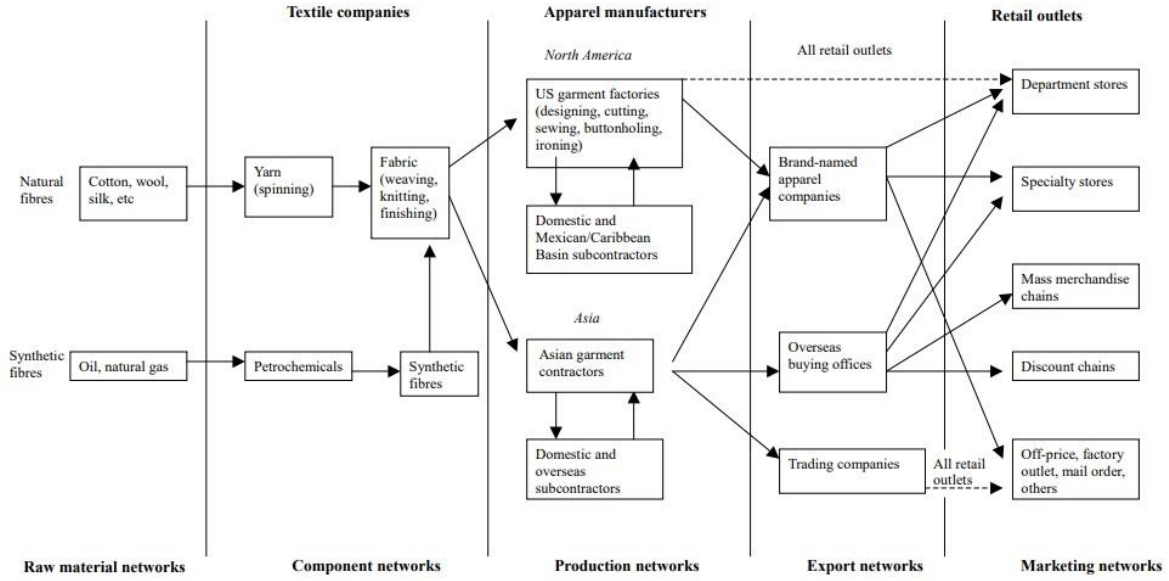

Figure 3.7 Apparel Value Chain (Source: (Gereffi & Memedovic, 2003))

Chapter 4: Literature Review

4.1 Introduction

This chapter presents the review of existing literatures related with the study area. The purpose of this chapter is to summarize and synthesize the existing academic as well as non-academic studies related with the core study area to characterize the strengths, weakness and the dimensions of the existing literatures as mentioned by (Brancati, 2018) in his book Social Scientific Research. The chapter mainly conceptualizes and synthesizes existing literatures regarding Circular Business Model, Typologies, and Value Creation; Circular Business Model and Competitive Advantage; and Applications of OLI Framework in Circular Economy Model. The previous chapter have conceptualized the Circular Economy Model and Apparel Value Chain, which is technically a part of literature review but separated as a chapter as they cover the bigger ground of conceptualization of the main topics of the thesis.

4.2 Search Methods

The primo search engine of Aalborg University Library is mainly used to search the literatures. This specific search engine has been used because a number of rich databases including Emerald Insight, ProQuest, Scopus and EBSCO are linked with it. Almost all research articles have been collected from these databases. While searching literatures using the search engine a few specific key wards have been used to search the papers.

The Key wards include, Circular Economy, Circular Business Model, Typologies of Circular Economy, Apparel Value Chain, Apparel Value Chain and Circular Economy, Circular Economy and Value Creation, Circular Business Model and Competitive Advantage, OLI Framework and Circular Economy.

In order to find the right literature some filters have been used while the search was conducted. The search includes studies mostly conducted between 1998 to 2019. In some rare cases broader time frames have been. The peer reviewed journals have mostly considered. In addition, annual or special reports and publications of different multinationals, leading research groups and organizations have also been considered.

4.3 Circular Business Model, Typologies, and Value creation

4.3.1 Circular Business Model and Value Creation

Success of businesses equally depends on the business model implementation and selection of technologies; tangible assets and equipment (Teece, 2018). It means the success of the business mostly depends on the business model it has. This has also got a high interest in the field of academic literature since nineties (Zott et al., 2011). The term 'business model' is picked up by the scholars of management field and it has been added to the management vocabulary as a 'quite fashionable' term (Shafer, Smith, & Linder, 2005: 200). Since the inception of using the term the scholars tried to define the term in different ways and the number of definitions of the term are as much as the types of business models (Teece, 2018). There are some simple definitions like "the way how a business works " (Mason and Spring, 2011, p. 1033) or "way of doing business' (Voelpel et al., 2005, p. 40) and on the other hand, there are also some detail definitions of the concept too. Casadesus-Masanell and Ricart (2010) have conceptualized 'business model' as a choice and its consequence that a company makes and faces. This points on the planning and the outcome of this of a business model. Amit and Zott (2001) have provided a detail definition of BM by stating this as a content, structure and governance of business activities those are designed for value creation by exploiting business opportunities. Teece (2010; 2018) has also viewed business model as a value creation, delivery and capture mechanism where businesses deliver value to customers, customer pays for value and the payments are converted into profit for the firm. The model of value creation, value delivery and value capture by business models were also supported by (Osterwalder and Pigneur, 2010). Teece also viewed business model from the dynamic capability's point of view. He believes that business models are dynamic capability oriented and the designing, implementing and transformation of business models are the consequences of high-order dynamic capabilities (Teece et al., 1997; Teece, 2007). Conceptualization of any term is not complete unless the components of the term is unveiled. There are some major components of business model. Morris et al. (2005) identified the major components of business model which are guided by six questions, "How do we create value?", "Who do we create value for?", "What is our source of competence?", "How do we competitively position ourselves?", "How we make money?" and "What are our time, scope, and size ambitions?"

In circular economy model firms need a particular business model to follow. This is why the concepts on business models have been presented before starting the review of the literatures regarding business models and circular economy. Business models in circular economy are the models that runs in circular economy model. Although circular business models can be regarded as a subcategory of business models (Antikainen and Valkokari, 2016), It can be denoted that according to (Antikainen and Valkokari, 2016) that circular business model is a kind of business model. The circular business model concept helps companies adopting circular economy practices (MacArthur, 2013; Van Renswoude et al., 2015; Bakker et al., 2014b; Bocken et al., 2016). Mentink (2014) have defined circular business model as a value creation, delivery and capturing tool for an organization with a closed material loop. The value point of view Mentink (2014) synthesizes with the contribution of Teece (2010; 2018) and Osterwalder and Pigneur (2010) regarding business model. All these literatures proved circular business models as a value creating model which is also supported by the previous literatures. The circular business models work for creating commercial value by adopting circular strategies that can extend the life cycle of product (through repair and remanufacturing) and close the material loops (Nußholz, 2017). Nußholz (2018) also advised the firms to design the business models in a way that preserve and utilize value embedded in resources. The value creation point of view has been the main essence of circular economy model. Almost every literature regarding circular business model addresses the value perspective of circular economy. Stahel (1994) which is the one of the highest cited research and pioneer in this field as well as Velte and Steinhilper (2016) both synthesizes that circular business models support a system that preserves the economic and environmental value at the highest level of utility (Stahel, 1994; Velte and Steinhilper, 2016). Linder and Williander (2015) also conceptualized circular business model as a value creating model that retains value in used products to generate new offerings.

Accenture has found in their studies that circular economy has a potential to become a trillion-dollar opportunity globally in immediate future (Lacy, et al., 2014). They have identified four areas of value creation, i.e. Lasting resources, Liquide markets, Long life cycles and Linked value chains by the firms in a circular economy through a top-down approach based on a holistic definition of the circular economy (Lacy, et al., 2014). Following figure illustrates the value creation areas.

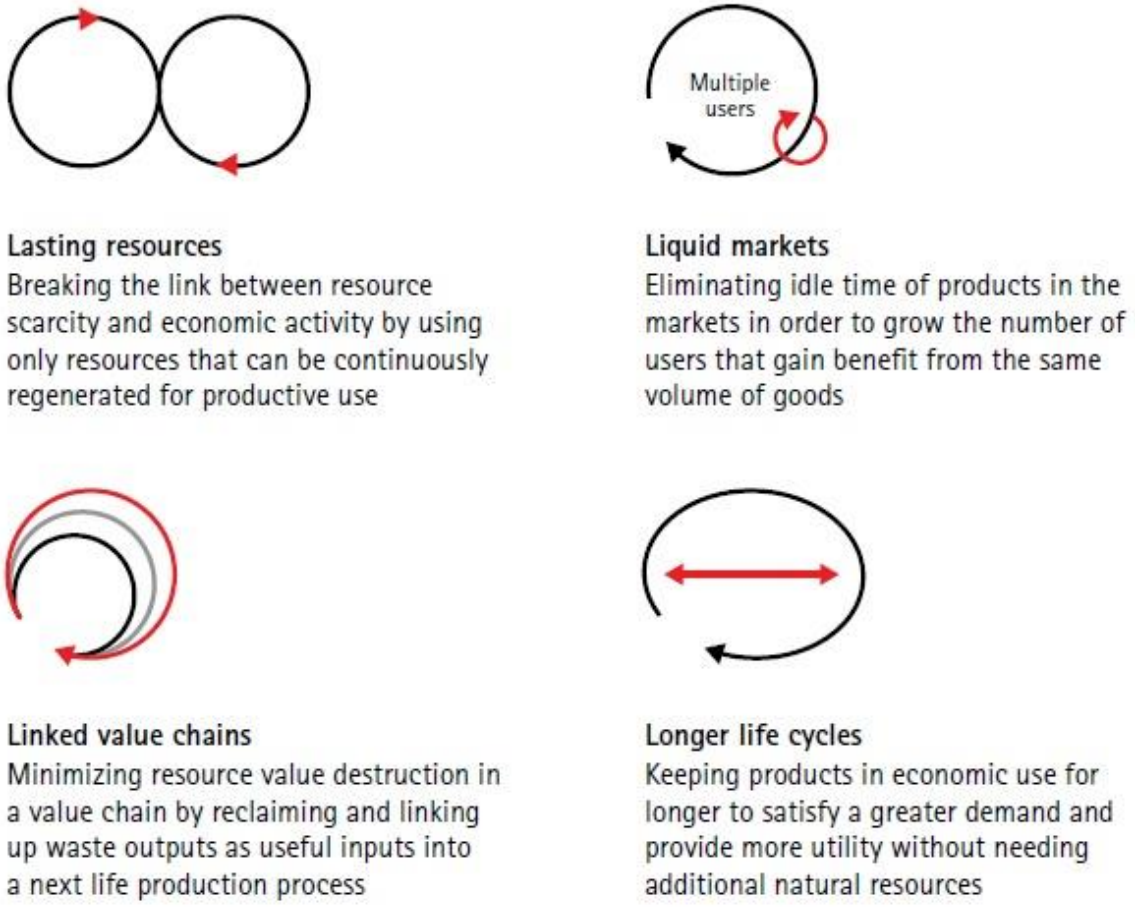

Figure 4.1 Areas of value creation in a circular economy (Source: (Lacy, et al., 2014))

4.3.2 Typologies of Circular Business Models

Linear model of business operation is not only a threat towards the scarce natural resources but also a tension for the companies due to the increasing cost of finite resources and reactions of the responsible customer groups. Effective circular business models provide the opportunity to perform positive business operation "through growth" model instead of "less-harm" models (Lacy, et al., 2014). Accenture have identified such five business models, i.e. Circular Supplies, Resource Recovery, Product Life Extension, Sharing Platforms, and Product as a Service by analyzing more than 120 business cases those are generating resource productivity through innovative means (Lacy, et al., 2014). Following figure presents the five innovative circular business models.

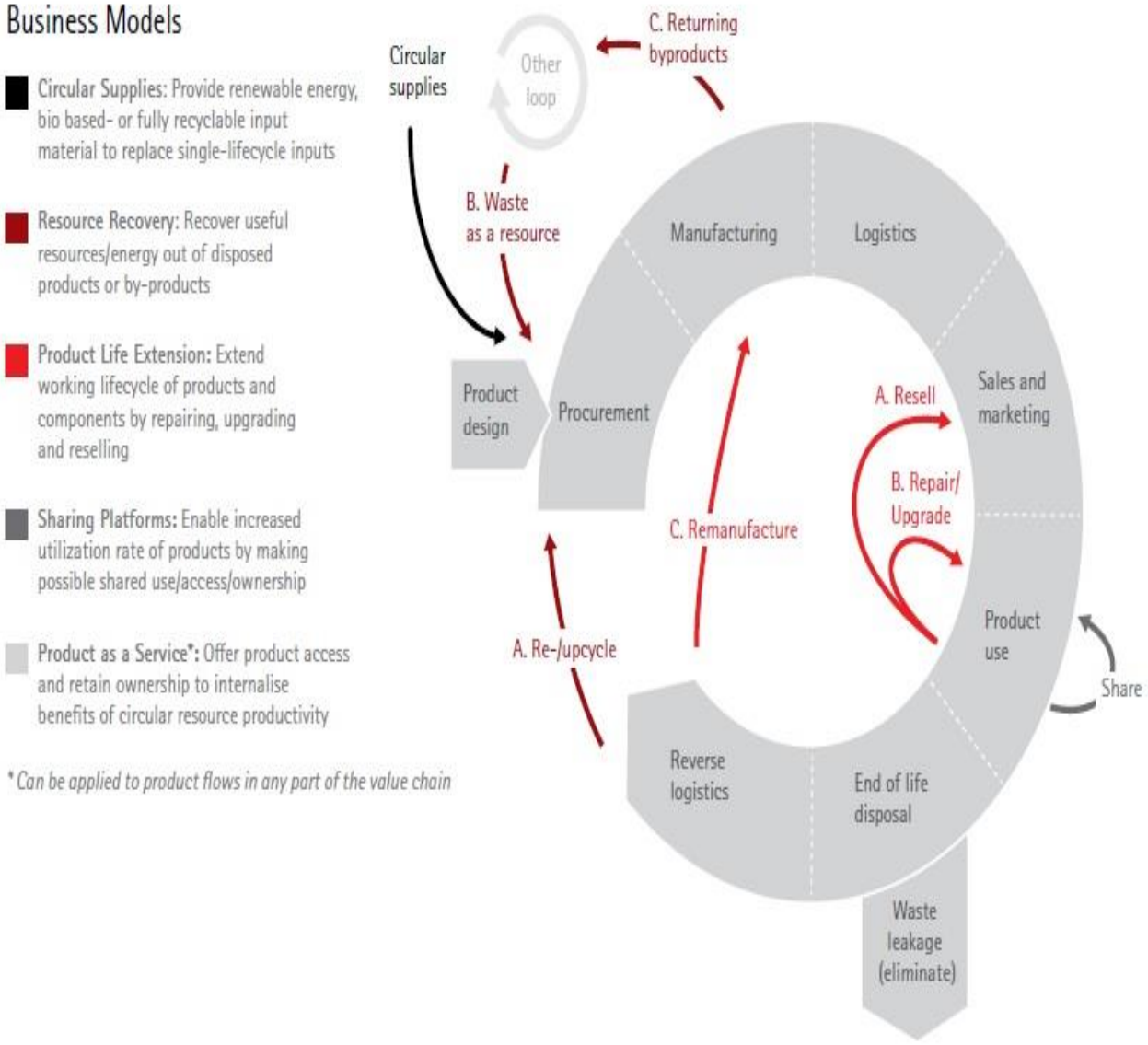

Figure 4.2 Five Circular Business Model (Source: (Lacy, et al., 2014))

These innovative business models might not be feasible without some aiding technology. Accenture has identified some technologies those can facilitate these circular business models. The value chain in circular economy should be designed in a way where the users and different actors of the chain can interact each other without any interruptions. This is facilitated through the aided technologies. There are three types of technology, i.e. digital or information technology, engineering or physical technology and hybrid of these two (Lacy, et al., 2014). Following figure presents the business models and required technologies in circular economy.

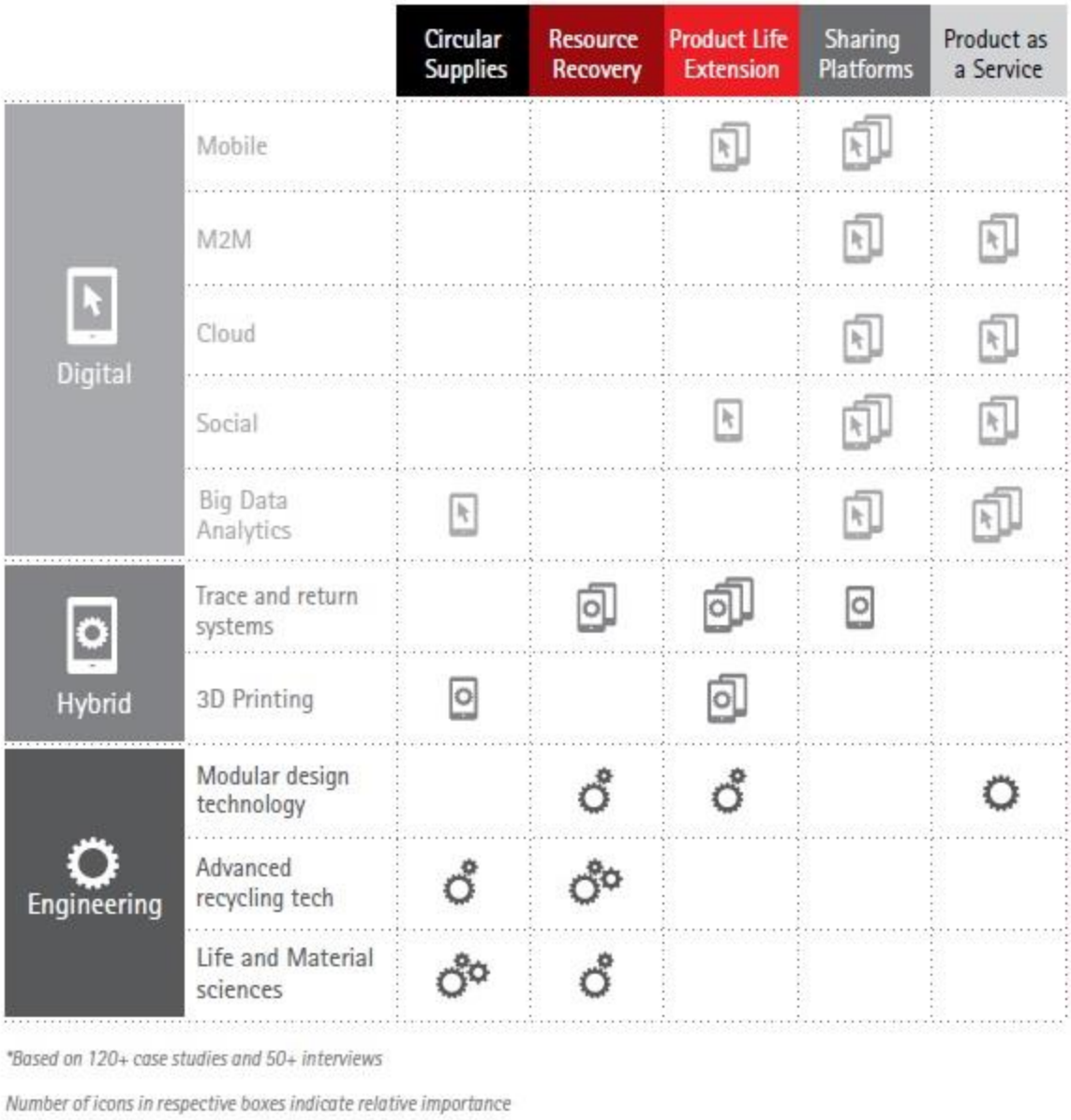

Figure 4.3 Disruptive technologies used by circular business pioneers. (Source: (Lacy, et al., 2014))

Accenture has also found out some capabilities those are essential for the leaders to implement the circular business models. Among the capabilities the first comes the capability of business *planning and strategy*; secondly the leaders should have the capability of innovative *product development and innovation*; thirdly the capability of having renewable and fully restorable *sourcing and manufacturing;* the fourth capability that a circular business model requires are *sales*

and marketing capabilities; and the fifth capability that a circular business model requires for success are *reverse logistics and return chains*.

A different perspective on the circular economy models are presented by Hollander et al. (2017). They have identified two forms of circular product design. Although those cannot be termed as the typologies of circular business model, indirectly they can be termed as typology. The study proposed two typologies, i.e. 'Design for Integrity' and 'Design for Recycling' (den Hollander, Bakker and Hultink, 2017). These design typologies can turn into circular business typologies. The options of circular business models based on these typologies are presented on the following figure,

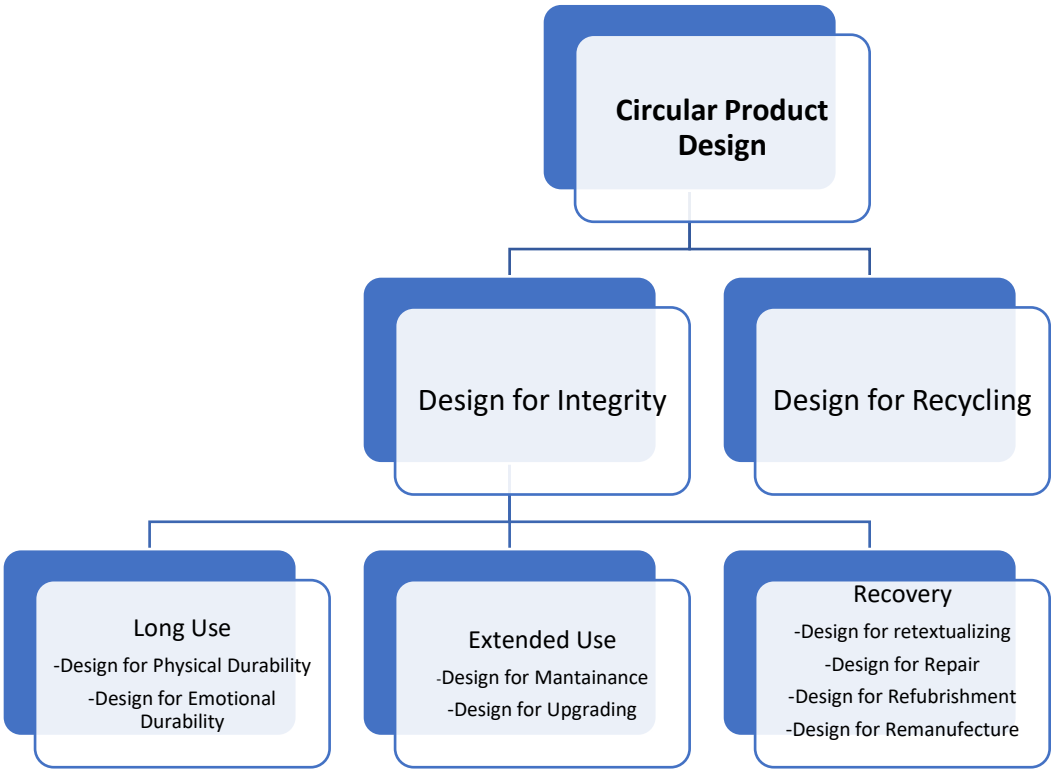

Figure 4.4 Circular Product Design (Self made, inspired by (den Hollander, Bakker and Hultink, 2017)

Lüdeke-Freund, Gold and Bocken, (2018) is the most comprehensive study of circular economy business model (CEBM) till date. The study has accumulated 26 different models of CEBM across the industries from the previous literatures. The study also suggests six broad categories of CEBMs design options irrespective of industries. The CEBMs design options are "repair and maintenance;

reuse and redistribution; refurbishment and remanufacturing; recycling; cascading and repurposing; and organic feedstock business model patterns" (Lüdeke-Freund, Gold and Bocken, 2018). Following figure (adapted from EMF 2012) presents the newly proposed CEBMs,

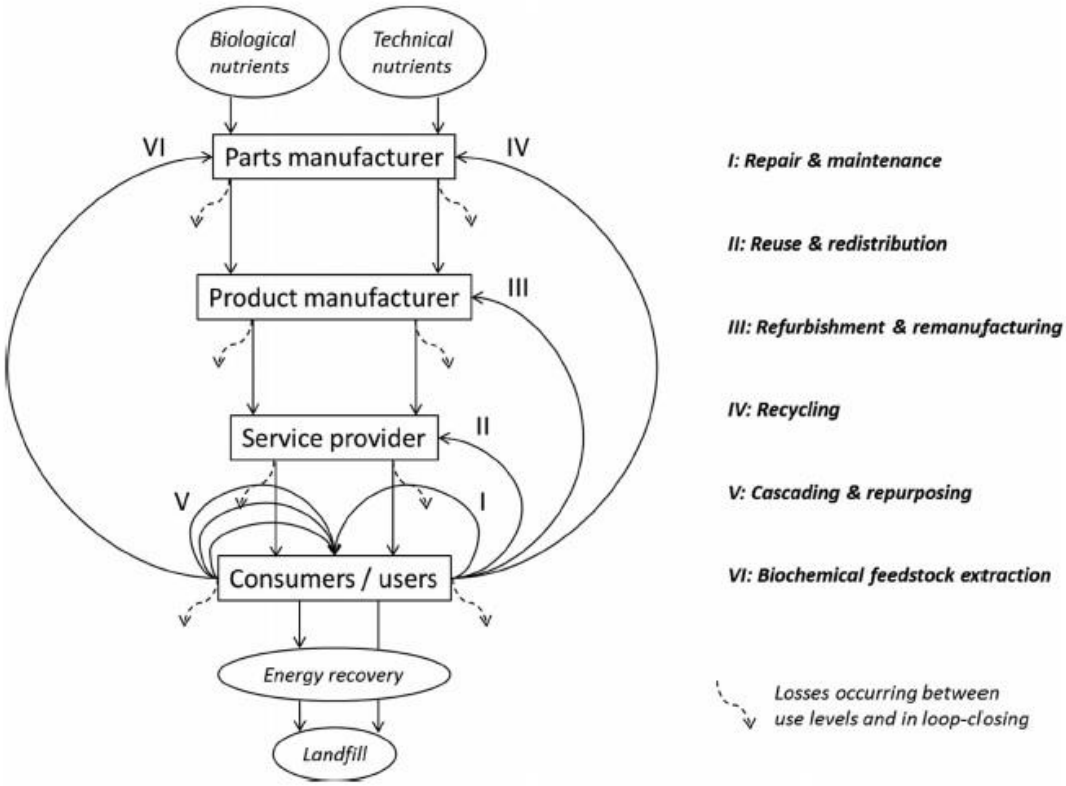

Figure 4.5 Circular Economy Business Models (Source: Lüdeke-Freund, Gold and Bocken, 2018, Adapted from EMF 2012)

4.4 CEM and Competitive advantage

The business dimensions of big companies have changed over the last decades. Big multinationals are trying to integrate the philanthropic point of view and economic efficiency in one point for many years and now it seems possible (Ciravegna, 2012; Pies, Beckmann, & Hielscher, 2010). Leading companies now believes that an innovative sustainability strategy can provide a competitive edge (Berns et al., 2009) which will enable the companies to increase profits and enjoy advantage and opportunities in markets (Khavul & Bruton, 2013). The multinationals face a real problem in these areas. The sustainability practice they do either works for positive market building or costing money in the form of philanthropic activities. Unless the firms can turn these activities into financial forms, or unless the managers cannot measure the financial outcome for the firm, the management is unsure about adopting sustainability that leads towards a threat of

losing profits and being portrayed as responsible player in the market. Circular economy can provide solutions for the firms in this regard for integrating company growth and sustainability (Rattalino, 2017). This is possible as circular economy has the possibility of creating competitive advantage for firms. Companies from different industries having improved environmental performance can create offers with competitive advantage (Nußholz, 2018). Hart and Milstein (2003) also concluded that circularity can create competitive advantage for companies and help them to achieve significant strategic objectives. A similar study was carried out after ten years by MIT Sloan Management Review and Boston Consulting Group that confirmed that sustainability generates competitive advantage for the firm (kiron et al., 2013).

Literature suggest that, firms adopting circular economy enjoys competitive advantage and this leads to the higher sales. Multinationals around the world adopting circular economy is found among the best sellers. Patagonia, a leading fashion manufacturer had a rise of sales by 30% after adopting circular economy model (Rattalino, 2017). The 'buy less' campaign by Patagonia was a very successful one that did the marketing trick basing sustainability and circularity. Although Patagonia's case suggests that, their intention was always to address sustainability, the branding of circularity and sustainability can subsidize the cost of circularity and moreover makes profit out of it (Rattalino, 2017). Leading firms in the industry like Walmart, Levi Strauss, Nike, Gap and Adidas are following footsteps of Patagonia and joined the forces in Sustainable apparel Coalition (Rattalino, 2017). Rattalino (2017) also stated that companies who are more concerned about environment stay ahead of inescapable future regulations and this let the firms to enjoy a competitive advantage relative to traditional competitors. This is also addressed by Stevensen (2012), who stated that circular strategies serve as a good brand management strategy because, the customers are more aware about the company's social policies.

In the resource-based perspective, if firms can show distinctive competencies it can lead to sustainable competitive advantage (Ghauri et al., 2016). This applies to firms adopting circular economy as leading players in garment manufacturing are adopting circularity in a state that shows a distinctive competence for them which might lead to competitive advantage. Competitive advantage comes from different value chain activities (WU & WU, 2006). An industry focused study has found scopes of getting competitive advantage by companies adopting circular economy

in different stages of value chain including procurement, production and after sales support services (Horncastle & Batal, 2018). The global apparel multinationals earn competitive advantage through strong and long value chain (Bathnagar and Teo, 2009). The same study showed how Zara and Walmart enjoys competitive advantage having a strong value chain and how competitive advantage is gained through different stages of value chain (Bathnagar and Teo, 2009). This is synthesized in some other studies. A number of literatures also presented a supply side and a demand side of value chain that adds competitive advantage in different levels of value chain (Bathnagar and Teo, 2009; Xue, Ray and Sambamurthy, 2013; Priem and Swink, 2012). This thesis tries to identify the competitive advantage winners from both the supply side and demand side perspectives of different apparel multinationals across their value chain. The following framework will be used to analyze this,

Firms	
CEM Types	
Value Chain Activities: *Design*	Demand-Supply Side Competitive Advantage (CA)
	Competitive Advantage Winners
Sourcing	Demand-Supply Side CA
	CA Winners
Production	Demand-Supply Side CA
	CA Winners
Logistics & Distribution	Demand-Supply Side CA
	CA Winners
Product Use	Demand-Supply Side CA
	CA Winners
Reuse & Recycle	Demand-Supply Side CA
	CA Winners

Figure 4.6 Competitive Advantage Creation Framework of CEM

4.5 Application of OLI Framework in Circular Economy Model.

The boundaries and scope of the firm is very difficult to determine (Dunning and Lundan, 2008). Many theorists have tried to define the boundary or scope of the firm. Among all the scholars Penrose (1959) is probably the most successful in proposing a theory for organization with the resource-based view of the firm. The resource-based theory or other theories those endeavored to propose the organizational theories are mostly ownership-based theories of the firm that are increasingly being challenged by the new types of firms those are not mostly ownership-based (Dunning and Lundan, 2008). The current business world needs more adaptive theory for matching with the contemporary MNE network. The current model of multinationals is not fully ownership based rather network based. The apparel multinationals, which is the focal industry of this thesis is a kind of industry where the firm own a very limited part of its value chain. The traditional linear approach was of this industry was also network based so when the industry aims to adopt the circular economy approach it needs a different theoretical approach. The OLI framework which is also known as 'Eclectic Paradigm' by John Dunning (1977) is a theoretical approach that perfectly match with the need for the global apparel industry adopting circular economy approach. In later periods the framework is adapted and modified in several occasions by the author and collaborators. This part of the thesis first conceptualizes the OLI framework and then uses it as a lens through which it views the circular economy activities to prepares a framework of its application in circular economy model.

OLI (Ownership, Location, Internalization) Paradigm or Eclectic Paradigm is a holistic framework that addresses the importance of some significant factors those influence the growth and production in foreign markets (Sharmiladevi, 2017). Dunning was inspired by the productivity of US firms in UK. The theory explains to which extent Ownership, Location and Internalization advantages of multinationals help to perform the value-added activities and the significance of the advantages are context specific, especially industry and geography specific (Sharmiladevi, 2017). In simple terms, 'OLI' stands for Ownership, Location and Internalization which are three potential sources of advantages those influence the firm's decision of going international (Neary, 2009).

Let's focus on the three components of OLI framework.

Ownership addresses the point why some firms can go for internationalization not other firms can go for it, it also suggests that successful multinationals have some firm-specific advantages that help the firms to overcome the costs of operation in international markets (Neary, 2009). Which means the firm investing abroad must own some sort of ownership advantage relative to local firms in the country they are investing, and the ownership advantage might be related with the assets and transaction skills of the firm (Pedersen, 2003). Ownership advantage is the rational of the existence of the firm in the international market (Neary, 2009). This advantage includes the ownership of high level of assets including product development, managerial structure, patents, and marketing skills that allows the firm to produce at different places without undermining the efficiency (Neary, 2009).

Location advantage focuses, where the firm is going to locate in the foreign market (Neary, 2009). There might be possible sources of location advantages including supply-side and demand side advantages; institutional and structural arguments including trade barrier protection, infrastructure etc. (Pedersen, 2003). When the firm engages with the internationalization, particularly in FDI, there are two options or two motives for FDI. One is horizontal integration and the other is vertical integration. Be it horizontal or vertical integration the location decision is the prime decision behind choosing the countries of production. The choice and pattern of choosing the location of foreign plants reflects the 'complex integration strategy' of the firms for both the cases, horizontal and vertical motives of engaging in FDI (Neary, 2009).

Internalization factor denotes the firm's tendency to internalize international structural or widespread limitations in the intermediate product market (Dunning and Lundan, 2008). Internalization advantages focuses the firm's decision of operating in a foreign market either through wholly-owned subsidiary or operate through different entry modes like exports, licensing, or joint venture (Neary, 2009). This implies that, it is preferable to hold the full control within the firm rather using other alternative entry modes like joint ventures, licensing or export and the full control by FDI includes transaction cost, uncertainty and control over distribution (Pedersen, 2003). Although it depends on the firm's capability. Firms most likely internalize those activities which includes the unique skills and capabilities of the firms (Dunning and Lundan, 2008).

The OLI variable are different independent advantages that facilitates internationalization, but these factors are inter dependent on one another (Sharmiladevi, 2017). Some authors have termed this paradigm as a narrower one and some have criticized as a broader one. The paradigm is narrower one in the sense that it addresses FDI only as a form of internationalization (Pedersen, 2003). It leaves a question mark against the framework in terms of other entry modes. It has also been criticized as a broad and loose one in the sense that O, L, and I advantages can be operational and they represent to be necessary not to be sufficient (Pedersen, 2003) Rugman (1981) finds limitations from the epistemological point as the border between O and I is blur and which was not refuted by Dunning (1988) saying that O and I advantages having a tendency to become inseparable (Pedersen, 2003). Although Dunning and Lundan (2008) expressed that, rather to equate O and I, it is preferable to perceive as make-or-buy decision of the firm where MNE would be considered as a collection of value-added activities within internal and external ownership boundary controlled and coordinate by the firm (Dunning and Lundan, 2008).

Despite having few criticisms, the OLI framework has positioned among the other internationalization theories. It is a theory having less criticism and the criticisms have also been refuted in some cases. This theory mostly be applied from the institutional point of view among the other internationalization theories. This thesis takes this framework as a theoretical framework to analyze the value creating activities of apparel multinationals adopting circular economy concept. Circular economy models of apparel multinationals aim to derive competitive advantage in cross border context in respect of ownership advantage, location choice and internalization or externalization. The CEMs have a very complex value chain that determine the advantages and decisions of apparel multinationals in terms of OLI context. Therefore, CEM typologies and OLI decisions differ in different value chain stages. These differences and competitive advantage gain in international context by CEMs can be analyzed by using following analytical framework,

CEM (Marco Types)			
CEM (Micro Types)	Type A	Type B	Type C
Firms	A	B	C
Value Chain Activities/OLI Factors	O	L	I
Design			
Sourcing			
Production			
Logistics & Distribution			
Product Use			
Reuse & Recycle			

Figure 4.7 Competitive Advantage Through CEMs in OLI Framework

The literature those have been reviewed in this chapter provides a clear understanding of circular economy and business models. The studies also confirm that different circular economy typologies create value and competitive advantage. The conceptual framework of the whole literature review can be presented in following conceptual framework. This framework will be tested by the data analysis in this study.

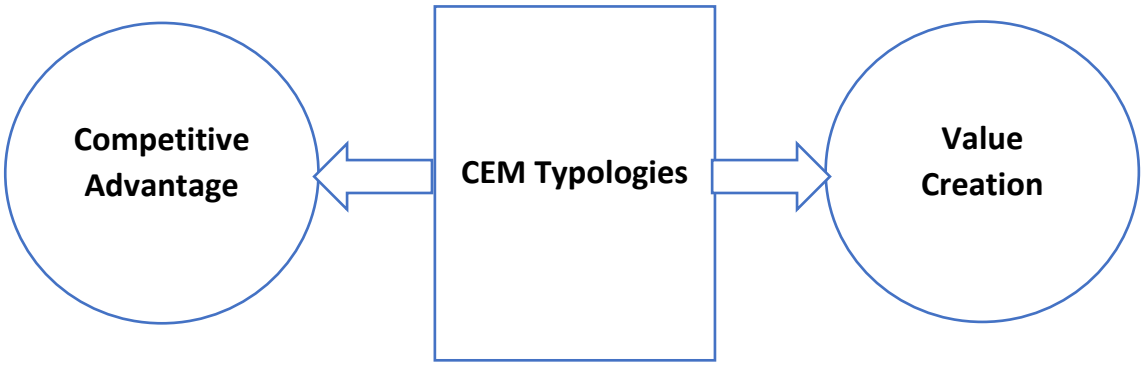

Figure 4.8 Conceptual framework of Value and Competitive Advantage Creation by CEM Typology

PART III

Chapter 5: Analysis

5.1 Introduction

This chapter analyzes the data collected for the study. It follows a qualitative method of data analysis. This thesis has collected data from different secondary sources. It was mentioned in the introduction that the study is conducted on the selected apparel multinationals. The data collection process and methodological aspects are discussed in the methodology chapter. This chapter analyzes the data from different viewpoints and in different layers. Data were collected case wise based on different data needs and categories. Data were collected on the type of Circular Economy Model followed by the company; different circularity practices; Value Chain activities of Circular Economy practices of that company; Ownership, Location and Internalization advantages and decisions of each value chain activities of the particular company; Competitive Advantage creation points of each activities for the lead firm as well as for the suppliers; Sustainability achievement points by the circular value chain activities of the firm; Competitive advantage creation for the company from demand side, supply sides. The data on these points will be used to analyze at different layers of analysis of the study. First, these data will help to identify the typologies of Circular Economy Model of Global Apparel Industry following circular economy practices. There will be broad categories as well as sub categories. This would be the first contribution of this theses. On second layer of analysis, Competitive Advantage creation by circular economy models in the cross-border context will be analyzed. The study is conducted on apparel multinationals and they operate globally where it sources from one country and sells to another country. These multinational operations include many decisions regarding ownership advantages, location and internalization and externalization. This complex cross-border operations context will be addressed using OLI framework which will help to explore the competitive advantage areas of circular economy models in international settings using the value chain activities. This will find the advantages and decisions of value chain activities of different types of circular economy models while internationalization. On the third layer of analysis, the types of circular economy models and competitive advantage creation for the companies based on the value chain activities will be analyzed. This analysis will consider supply side and demand side perspectives of value chain activities. The core objective of this analysis is also to find out the ways of competitive advantage creation. On fourth and final step of analysis, the data will be used to find how different

sustainability types contribute in the competitive advantage creation. This layer of analysis will show how social, economic and environmental sustainability contribute on competitive advantage creation on different CEM types. Among the frameworks mentioned, some of them were prepared based on the previous established literatures and some of them are original contribution of this thesis.

5.2 Typologies of Circular Economy Model

The typologies of Circular Economy Model (CEM) of Apparel multinationals are one the major contributions of this study. CEM typologies have been developed using the data at hand those were collected from the different secondary sources. After analyzing data five broad types of Circular Economy Model have been developed. The five broad categories are, *Multiple life Circular; Long life Circular; Waste to Circular; Support Circular; and Single life Circular.* These five broad categories include nine other sub categories. The broad categories and the sub categories are presented in a comprehensive figure in figure 5.1. This following section presents the typologies of CEM. The discussion starts under broad categories where sub categories will be discussed under the broad categories.

5.2.1 Multiple Life Circular

Multiple life Circular is the CEM that most of the apparel multinationals follow who are practicing circular economy model. This is a model of circular economy that is also becoming the mainstream circular economy options for apparel multinationals. It allows the products to live multiple lives without being thrown out to landfills. The main motto of this model is to extend the life cycle by giving multiple lives to the garments. The sub categories include, *Collect, Reuse, Recycle; Recycle; and Market Driving Circular.* The typologies are discussed as follows,

5.2.1.1 Collect, Reuse, Recycle:

Collect, Reuse, Recycle is the most classic model of circular economy. There were some firms who are following this model even a lot before the idea of CEM is being popularized among the apparel multinationals. This model is a simple model where companies collect used garments from the customers using collection bins located in their stores and use those clothes are reused to make new raw material to produce new clothing. 57 % of the materials used by H&M are recycled (Sustainability Report, 2018). In 2018 they have collected 20,649 tonnes of garments for recycling

(Sustainability Report, 2018). Inditex collected 12, 229 tonnes of garments through their closing the loop campaign and selected 18, 421 tonnes of garments to be send for recycling (Sustainability Balance Sheet, 2017). C&A have collected 278 tonnes of garments so far (sustainability.c-and-a.com, 2019). Bestseller have also collected a lot of clothes, although the exact amount is not disclosed. All the companies provide discount vouchers while they collect the old clothes so that the customers are motivated to participate on the take back program. The collected garments are then sent to sorting houses. Some companies own their own sorting house and there are some third parties like Boer Group (boergroup.eu) who works for the companies to sort the garments. One portion of the garment goes to charities for immediate reuse, one portion goes for modification (only a few companies does this, H&M has this scheme) of the clothes, one portion goes to factories where the clothes are broken down to make new fabrics. There is still some garment left which cannot be reused or recycled in any means. They go to the incineration plants where those are burnt for producing energy. H&M sends 3-7% to the incineration plants of the clothes they collect (Sustainability Report, 2018). These is the last resort for all unrecyclable cloths. All the case companies are trying to send less items for incineration each year.

5.2.1.2 Recycle

This CEM model is followed by the companies who only follow the recycling as a mode of circularity. The companies who serves from the business to business perspective are likely to follows this model of circularity. Among the case companies only Lenzing is found to follow this model. They produce man made cellulose fibers using wood pulps. The CEM model partly replaces virgin pulps. They also use unused raw materials and wastes from apparel industry to make new fibers. Recently they are using REFIBRA™ technology to turn cotton scarps into dissolving wood pulp those are converted into TENCEL™ fibers (Sustainability Report 2018). This is how recycling model of circular economy works.

5.2.1.3 Market Driving Circular

Market driving circular is a circular economy model that is not production or supply focused rather demand and marketing focused. Companies are promoting circularity among the customers as the customers are also interested and conscious about it. Apparel multinationals are introducing new brands for circular clothing to meet the demand of the special segment of customers. In most of the cases companies are not creating offers in response of the customer needs as customers are still

not fully aware about circularity. In this case, companies are driving the market. H&M has a number of brands those are leading the market driving circular model. COS brand of H&M uses cut off materials and blends those with organic cotton to produce clothing; CONCIOUS brand uses recycled materials for production; Monki and Cheap Monday uses 100% sustainable cottons, Weekday uses recycled and organic cotton at their all denim collections; Econyl uses recycled nylons (Sustainability Report 2018). SELECTED of Bestseller has a goal of using as much sustainable fibers as possible and the brand used 855000 plastic bottles to make a regular polyester in 2017; Jack & Jones has also making products using recycled cotton since 2015 which meets every stringent quality and product requirements; in 2017, VERO MODA relaunched their Green Attitude collection under a new name 'AWARE' which is designed with sustainable materials like Lyocell, Organic cotton, Recycled cotton, and Recycled Polyster (Sustainability Report, 2017). These all initiatives are driving the market and created a new typology of circular economy model.

5.2.2 Long Life Circular

Long Life Circular is a circularity model which is not addressed all the companies studied in this thesis, but this typology is an important one as this model is easy to follow by the large companies as well as small companies. This model can be implemented by small or large investment. Among the case companies only H&M is found to use this model. There are two sub categories of this model, i.e. *Long-life Cycle and Renew & Remake.* Details of these model are as follows,

5.2.2.1 Long life Cycle

Long life Cycle CEM focuses on the lengthening of the products life so that it is not considered as waste or become unusable very quickly. Shortening of product life cycle is a major threat towards mounting apparel waste. The number of times a cloth is worn in its life time has significantly decreased in last 15 years where the number of production and sells have increased in reverse rate (New Textile Economy, 2017). The problem can be solved by extending the life cycle of the clothes. Long life Cycle model works in two ways. Firstly, the products are made ensuring longevity of the product. H&M focuses on the longevity of the product so that it doesn't damage very quickly. Secondly, using unsold products. H&M has a brand called 'AFOUND' that sells unsold products at a discounted rate and gives the products a longer life.

5.2.2.2 Renew & Remake

Renew & Remake CEM also gives the products a longer life. This model is economically viable and easy to execute. The execution depends on the executing company how it wants to extend. This model uses the new products to give a long life. In some cases, products are sorted as faulty in QC checks or in some cases products are damaged while shipping from suppliers or to the stores. These clothes are considered as waste. Renew & Remake model of CE can use these products to give a new long life rather throwing as a waste. H&M turns old or faulty clothes into new fashion through reprinting, re-purposing and remaking (Sustainability Report, 2018). Monki launched Re:Love event in Gothenburg and Stockholm to invite customers bring their old clothes to modify them with new stickers and prints; WEEKDAY launched a mini workshop inside their outlet at Stockholm to prepare custom made clothing for the customers and also repair their old clothing; Cheap Monday launches a campaigns every year where they upcycle work wares through repair and remake.

5.2.3 Waste to Circular

Waste to Circular model uses the wastes of the apparel manufactures into raw materials and use those to produce new clothes. This is a simple and straightforward model. The manufacturers are not dependent on any other parties. They just collect the waste materials and turn them into raw materials. This study has found one model of Waste to Circular which is *First hand Circular* and it is discussed as follows,

5.2.3.1 First hand Circular

Circularity doesn't always means using the old materials and turning them into raw materials. First hand materials can also be used to in circular models. This model of CEM uses new cut off materials and use them to use as a new raw material. This model works in two ways. Firstly, taking enough measures so that the waste is reduced at the first place. For example, H&M uses 3d technologies to design and cutting raw materials that reduces the amount of wastes or cut off materials at the first place. Secondly, using the cut of materials into raw materials and make new clothes. These raw materials are better as these are new. COS brand of H&M uses the cut of materials and blend those with organic cottons and produce new cotton to make clothes.

5.2.4 Support Circular

Support Circular is a circular economy model which represents the smart thinking of the companies using it. Circularity is not always using the old materials or wastes to make new products, it can also be performed in a supportive way. The support activities in circular economy model also has a big impact on the circularity practice of the company. There are two types of support circular, i.e. *Operations Circularity,* and *Efficiency Circularity.* These are defined below,

5.2.4.1 Operations Circularity

Operations circularity includes the support activities for the firms engaged into circularity. In broader terms, it involves adopting circular economy principles in marketing, operations and in distributions. H&M is using recycled materials, unused materials and materials from old stores to decorate newly opened stores (Sustainability Report. 2017;2018). Inditex directs their store managers to collect and manage all used products including papers, cardboards, plastics, metal and other textiles and send to recycling (Sustainability Balance Sheet, 2017). Bestseller has a separate program for these materials titled 'Green-to-Pack" which ensures the packaging of all products sent to customers in recycled paper pack and they also reduced the thickness of the cartons of the clothing which uses less papers and makes it lighter while delivery and supply and this program saved 1700 tonnes of virgin paper; 1500 tonnes of plastic; 110 million recirculated hangers and 1010 million recycled alarms in 2017 (Sustainability Balance Sheet, 2017).

5.2.4.2 Efficiency Circularity

Efficiency circularity is a type of support circularity which supports the firms adopting circularity in efficiency gaining. It includes the use of renewable energy and the use of efficient means of transports for supply and delivery. The closing the loop concept addresses two areas, i.e. closing the materials loop and closing the energy loop. Efficiency circularity helps the companies to close the energy loops. H&M introduced efficiency improvement programs in Europe, China, Indonesia, Vietnam and Pakistan that saved 633,587,214 kWh which equals a reduction of 183,296 tonnes of Green House Gas emission (Sustainability Report, 2018). In addition, H&M has shifted more to electric vehicles in last-mile deliveries and so far, they have used electric trucks in Cyprus, France, China, Italy, and Finland where 50% deliveries in China are made using electric trucks; 19% deliveries in Italy are electric and 100% deliveries of & Other Stories and COS in Italy are served

by electric vehicle (Sustainability Report, 2018). Bestseller has used 733,867 MWh renewable energy on 2017 which reduced the GHG emission 22% per garment as well as 20% from the sales compared to the previous year. These energy and distribution efficiency close the material and energy loop and ensures circularity.

5.2.5 Single Life Circular

Single life circular is a unique type of circular economy model compared to other CEM typologies. It allows the products to live a single life and still be circular. The main principle of circularity is decoupling the waste from the production which lets no waste go to the nature which will be burden for mother nature. In this model products may lead a single life and also boost the circularity. There is one type of Single life Circularity found in this study. It is titled as 'Zero to Nature' which is defined as follows,

5.2.5.1 Zero to Nature

Zero to Nature model of circular economy sends zero wastes to nature and mostly has a single life. This sounds interesting for apparel companies. Technically and realistically this is possible. It includes using bio degradable and recyclable materials in the production process. The products can be recycled to make new raw materials and or can be decomposed in soil and marine environment if thrown away. Lenzing produces some cellulose fibers which is recyclable and also capable of being decomposed in soil and in marine environment. C&A has introduced gold graded Cradle to Cradle certified t shirts which can be decomposed in home-decomposing units in less than 12 weeks.

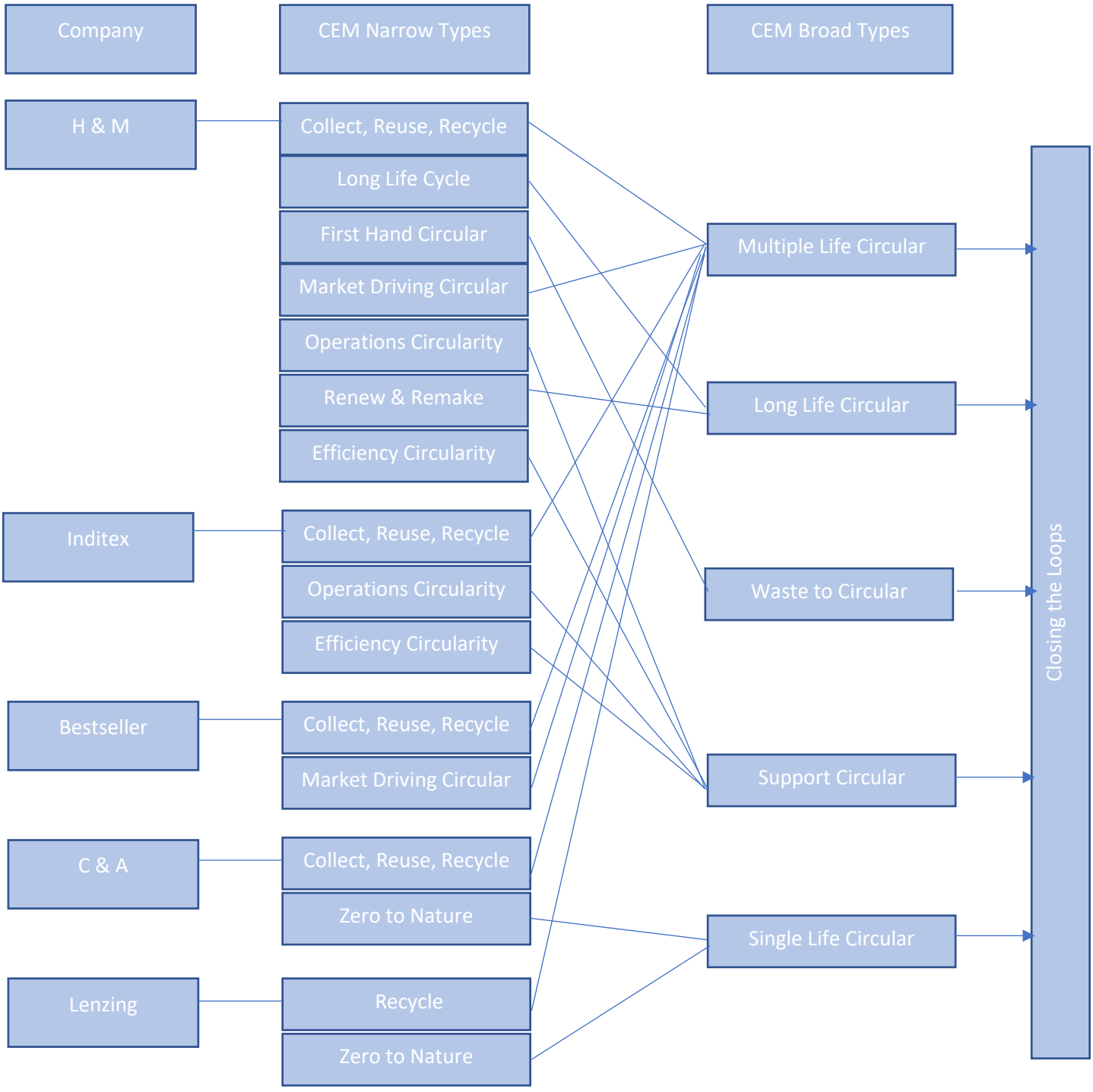

Figure 5.1 Typologies of Apparel Circular Economy Models

5.3 Competitive Advantage Through CEMs in OLI Framework

Apparel multinationals operate business in a complex cross border setting. When these firms adopt circular economy the complex value chains of these firms experience many diverse activities that create competitive advantage for the firm. These value chain activities include some advantages and factors related with the Ownership, Location and Internalization of the firm which determines why a firm goes international. These factors are significant for the firms to have those in order to earn competitive advantage in international market. The differences in Ownership decisions, Location decisions and internalization decisions varies in different CEM which creates competitive advantage for the firm as well as for the supplier from the value chain point of view in cross border setting. This is analyzed in this section using the Dunning's OLI framework.

This section of analysis will put lights on the application OLI framework in different typologies of CEM in terms of competitive advantage creation based on value chain activities. Table 5.1 presents a holistic figure of implication of OLI framework on the typologies of CEM.

CEM (Marco Types)	Multiple Life Circular (H&M, Inditex, Bestseller, C&A, Lenzing)			Long Life Circular (H&M)			Waste to Circular (H&M)			Support Circular (H&M, Inditex)			Single Life Circular (C&A, Lenzing)		
Value Chain	O	L	I	O	L	I	O	L	I	O	L	I	O	L	I
Activities: *Design*	Designers Training Skills Relationships	Home & Foreign	Internalize & Externalize	Designers	Home & Foreign	Internalize	Designers	Home & Foreign	Internalize	Designer Skills Training	Home & Foreign	Internalize	Relationship Skills	Home & Foreign	Internalize & Externalize
Sourcing	Trade- -Relationship Training Own Firms Partnering Firms	Home & Foreign	Externalize	Trade Relation	Home & Foreign	Externalize	Trade Relation	Home & Foreign	Externalize	Training Skills Trade Relation	Home & Foreign	Externalize	Supplier Relations & Management Partner farmer	Foreign	Externalize
Production	R&D Knowledge Production-Facility	Home & Foreign	Internalize & Externalize	R&D	Foreign	Externalize	R&D	Foreign	Externalize	R&D	Home & Foreign	Externalize	Production Facilities Knowledge	Home & Foreign	Internalize & Externalize
Logistics & Distribution	Management Capabilities Product-Development	Home & Foreign	Internalize & Externalize	Management	Home & Foreign	Externalize	Management	Home & Foreign	Externalize	Capabilities Supplier Management	Home & Foreign	Internalize & Externalize			
Product Use	Technology Policies Relationship with customers Standard	Home & Foreign	Internalize & Externalize	Technology	Home & Foreign	Internalize	Technology	Home & Foreign	Internalize	Policies Technology	Home & Foreign	Internalize	Standard	Home & Foreign	Internalize & Externalize
Reuse & Recycle	Technology Management Relationship with customer	Home & Foreign	Internalize & Externalize	Technology & Management	Home & Foreign	Internalize & Externalize	Technology & Management	Home & Foreign	Internalize & Externalize	Management Structure Technology Relationship Management	Home & Foreign	Internalize & Externalize	Capabilities	Home & Foreign	Internalize

Table 5.1: Competitive Advantage Through CEMs in OLI Framework

5.3.1 Circular Design in CEMs and OLI Framework

Design as a value chain activity acts as a source of competitive advantage in CEM. In Multiple Life Circular, companies own Designers, Training, Skills and Relationship which is also Same in terms of Support Circular. In Single life Circular owning Relationship and Skills are sources of competitive advantage while Long life Circular and Waste to Circular owns designers only. Owning designers are common for all the CEM types that create competitive advantage in international settings. For example, H&M trains the designers about picking the right materials for circularity; Inditex trained 1100 employees in 2017 among most of them are designers who are involved with circular design (Sustainability Balance Sheet 2017). These designers create designs taking global demands in mind. Lenzing holds 1,274 patent applications and the company owns 215 patents in 49 countries (Sustainability Report, 2018). These patents are the source of distinctive values that helps to earn competitive advantage from all over the world. Most of the companies have design facilities at home which is economically viable for them and its easy for controlling, while some companies have outside facilities for extracting advantage from international market. The design activities are mostly internalized as this is the core area of value creation for apparel companies that's why the companies want to keep it inside the organization. Among the case companies only Bestseller has externalized some design activities to ASOS where the owner of Bestseller has the highest number of shares.

5.3.2 Sourcing in CEMs and OLI Framework

Sourcing the right material from different international locations can ensure the collection of perfect raw materials which can be a source of competitive advantage for the firms. In Multiple Life Circular and Single life Circular firms own Trade Relationship, Training, Farms, Partnering Farms. Long Life Circular and Waste to Circular focuses on Trade Relation. Support Circular also focus on trade relation and they have an additional focus on Training and skills. Firms adopting CEM always sources from international locations as sourcing from foreign countries are cheaper which let them capture competitive advantage on costs. Therefore, the sourcing is always externalized. H&M has collaborated with Econyl, ARKET, Demito and Moral fiber for circular sourcing. They have also innovation collaboration with Worn Again, Re:newcell and Hong Kong Research Institute of Textiles and Apparel (HKRITA). These fibers create competitive advantage in production in circular economy setting. H&M have also investment on a Swedish company

named TreeToTextile that works with new technologies of making ecofriendly fibers from wood pulps (Sustainability Report, 2018). Inditex collaborated with Lenzing to convert textile wastes into textile fiber titled RefibraTM Lyocell. Bestseller collaborated in the Better Cotton Initiative (BCI) that works to improve cotton farming across the world. In order to make the supply chain organic, C&A has been working with Organic Cotton Accelerator (OCA) where CottonConnect works as implementing partner and Pratibha Syntex as a supplier and the project includes 300 Indian farmers (Sustainability.c-and-a.com). Lenzing aims to minimize purchase-specific risks through reliable, long-term supply relations and active supplier management (Sustainability Balancesheet, 2017). Lenzing asses its wood supplies of all countries which is 700 in numbers in cooperation with EcoVadis. Incorporating partners around the globe for sourcing allows the companies to earn competitive advantage in cross border context.

5.3.3 Production in CEM & OLI Framework

Production is the core activity of any manufacturing business model. In circular economy model production helps to earn competitive advantage from international business setting. Research and Development is the advantage of apparel multinationals that creates advantage in every CEM context. In Multiple Life Circular and Single Life Circular Knowledge and Own Production facilities create competitive advantage for firms. In circular production, firms own R&D facilities, Knowledge and Production facility. Although companies own production facility in very rare scenarios. Among all the studied firms Lenzing owns their own production facilities and those production plants is located both in home country and different foreign countries. In this case owning production facility at home provides some extra value to the firm as the suppliers are vey close to home market and can mostly supply on roads. In terms of other four firms, they have externalized the production facilities with their suppliers and all the products are produced in foreign locations to gain competitive advantage from international market. Although firms externalize the production activities they still need to maintain close ties with the suppliers. They need to provide the guidelines for maintaining circular processes or the suppliers proactively maintain the standard. All the Cradle to Cradle products of C&A are produced by two Indian manufacturers, Pratibha Sytex and Cotton Blossom who shares the same vision of circular economy which let the supplier win some competitive advantage. Lenzing maintains long term relationships with suppliers to minimize the purchase related risks.

5.3.4 Logistics & Distribution in CEMs & OLI Framework

Logistics and Distribution ensures the collection of products from suppliers and delivery to the stores and to the customers. This is such an important stage of value chain that directly affects the pricing. Companies tries to achieve advantage on this stage. In all CEM types focus is given on Capabilities and Supply Chain members management of Logistics to earn competitive advantage from international business operations. Among all the companies studied in this thesis, H&M and Inditex focuses most on the Logistics and Distribution and this is part of their circular strategy. The logistics and distribution facilities are based on local and foreign locations. These activities are mostly externalized, but, in home market, companies also prefer to internalize. In some rare cases companies also, own product development facilities to create competitive advantage in logistics and distribution. During 2017, Inditex introduced Green to Pack program. Under this scheme they have reduced the thickness of the packages that optimized transport. 600 suppliers of Inditex have already joined the program and acquired close to two million certified boxes. 100% shipment of online sales of Inditex are done using these boxes and outer protecting bags uses plastic bags among those 55% are recycled plastic. It is imaginable the amount of value Inditex has gained through this program. H&M is using electric vehicles in their supply and delivery to gain resource efficiency over European and Chinese market.

5.3.5 Product Use in CEMs & OLI Framework

Smart companies adopting circular economy can create the opportunity to earn competitive advantage even at the Product use stage of value chain from domestic and international market. Some companies are found very proactive in this manner. Almost all circular economy models focus on owning Technology and CRM where Single Life Circular focus on standards. The technology or CRM system adopted includes both home country and host country involvement which allows the firms to get connected with customers. Keeping in touch with customers ensures the customer loyalty which is a great source of competitive advantage. These activities are both externalized and internalized. Take Care concept of H&M does this for the customer. It is an internalized technology-oriented initiative. It offers garment take care guidance care through mobile app. The program also offers smart repairs and easy modifications. The most interesting part of this program is, H&M offers different behavior changing products including eco-friendly detergents, sewing kits, deco-patches and innovative washing bags that collect microfibers which

allow H&M to capture additional value. Bestseller maintains relationships with customers and motivate customers to take care of their clothes and donate those to the collection boxes. C&A also maintains relationship with customers to help them act more sustainably.

5.3.6 Reuse & Recycle in CEMs and OLI Framework

Reuse & Recycle are the one of the major value chain activities in circular economy model adopted by the apparel multinationals. In all CEM types, focuses are given on owning Technology and having a good CRM system. In fact, Reuse & Recycle is the core value chain activity that creates competitive advantage for the firms in cross border operations. The Reuse & Recycle activities are performed across the market in both home and foreign locations. The activities are both externalized and internalized by the firms. Both Bestseller and C&A initiated the Reuse & Recycle with their charity partners. C&A donated the good quality clothes to a Brazilian charity organization called 'Centro Social Carisma. Bestseller collaborated with Danish Red Cross on the 'Smid Tøjet' ('Drop Your Clothes') campaign and donated the good quality clothes to the organization and sent rest of the clothes for recycling. Inditex and H&M have different technological collaborations with external partners for the research and development of recycled fabrics and clothing. The collaborations are already discussed on previous section. Lenzing works directly with customers to collect wastes to turn into raw materials.

5.4 CEM Typologies and Supply-Demand Side Competitive Advantage Creation and Competitive Advantage Winners

This thesis mainly contributes in two points. The first major contribution required from this thesis was to explore and propose the typologies of CEM of apparel multinationals. Which has been done already. The second major contribution required from this thesis is the competitive advantage creation of circular economy models. This study identified that Competitive advantage is created for the firms adopting circular economy in both the sides, i.e. Demand Side and Supply Side. In addition, the competitive advantage is gained by both the lead firms as well as suppliers. This section describes the competitive advantage point of view of the circular economy typologies. The data collected and analyzed from the value chain point of view, this section on competitive advantage will also be discussed from the same perspective.

5.4.1 Competitive Advantage and Circular Design

Circular design creates competitive advantage in both areas, Demand Side and Supply Side. In most of the cases it creates supply side competitive advantages. In this stage of value chain both the Lead Firms and Suppliers enjoy competitive advantage. COS brand of H&M has created a need of new type of raw material which creates competitive advantage for the supplier. The same brand creates demand side competitive advantage and also attain supply efficiency using especial raw material and cut off materials. Inditex designs the support materials which provides supply side competitive advantages. Bestseller is arranging training facility for designers and buyer on circular economy which will help to achieve demand side and supply side competitive advantage. C&A is recently sourcing Cradle to Cradle certified products from the suppliers. In this case only capable suppliers who adopt circular economy has the advantage. This makes the circular economy model a competitive advantage creator for both the lead firm and supplier.

5.4.2 Competitive Advantage and Sourcing

Sourcing in circular economy creates competitive advantage from the supply side for most of the cases. In terms of H&M it creates competitive advantage from demand perspective as H&M has a long brand lines of circular economy and it is already established. Thus, it creates demand side competitive advantage and both the lead firm, i.e. H&M and the suppliers enjoy competitive advantage adopting circular economy model. H&M updated its sourcing policy and according to those updates they will source only from the low risk companies having certain standard including Canopy-Style audit, "green shirt" and Responsible Wool Standard (RWS). The standards will create competitive advantage for the suppliers as well as for the lead firm. Bestseller's suppliers also enjoy competitive advantage. By 2017 Bestseller worked with 410 suppliers and 752 cut, make and trim factories to help those factories face the social and economic challenges and meet standards. These helped the suppliers and companies achieve competitive advantage in terms of sustainability. Other studied firms of this study enjoy competitive advantage as the lead firms.

5.4.3 Production and Competitive Advantage

Production in circular economy model generates supply side competitive advantage and the competitive advantage is gained by both the lead firms and suppliers. H&M works closely with suppliers in resource efficiency program and the program outcome was very welcoming for the

suppliers. This type of activities create competitive advantage for both the parties. C&A is focusing more on Cradle-to-Cradle certified products which is creating competitive advantage for the companies and as a consequence it drives market demand and on the other hand it creates competitive advantage for the suppliers producing Cradle-to-Cradle products. Lenzing produces man made cellulose fibers and in some cases, they collaborate with customers to produce products. It creates demand side competitive advantage for the lead firm. Lenzing also have some activities that includes supplier's standard and certification which also creates competitive advantage for suppliers for their future business.

5.4.4 Logistics & Distribution and Competitive Advantage

Logistics & Distribution as a value chain activity in circular economy is considered by H&M and Inditex. Other studied companies are not that focused on this area as a circular value chain activity. These activities help the firms to achieve competitive advantage from both demand and supply side. Along with the lead firms, suppliers also enjoy competitive advantage in this level of value chain. H&M uses electric vehicles mostly in their land distributions and deliveries which creates competitive advantage towards the conscious customers and the delivery cost is also low which is another competitive advantage. Inditex has taken Green to pack program which is already presented in detail in previous section. This allows to save a lot of weights in transport thus creates supply side competitive advantage. The company also uses recycled materials for all types of e commerce delivery which creates a demand side competitive advantage from the responsible customers point of view.

5.4.5 Product Use and Competitive Advantage

Product use stage of value chain earns competitive advantage from demand side as well as supply side. Only the lead firms enjoy competitive advantage at this stage. Product use stage of Lenzing is actually the production stage for the customers. Companies who adopts circular economy prefers products produced by Lenzing which creates a demand side competitive advantage for the company. Bestseller, H&M, C&A, Inditex all the companies have a customer segment of circular products. These companies try to maintain CRM at the product use stage that creates a demand side competitive advantage for the firm from customers side. Strong CRM and technology aided communications let the companies assume the future demands in advance which also creates competitive advantage from both ends.

5.4.6 Reuse & Recycle and Competitive Advantage

Reuse and Recycle activities create competitive advantages mostly from supply sides. At this stage of CEM value chain, only lead firms enjoy competitive advantage. This stage earns inputs for the circular economy model of the company. H&M reuses 50-60% of the clothes they collect. This is a big area of creating competitive advantage for the company. On top of that, they recycle 35-45% of the textiles they collect. These huge amount of circular input gives a big value to the company. H&M saves and earns a good amount of money which let them set competitive pricing for all other products through cross subsidizing. This ultimately creates a competitive advantage from the supply and demand point of view. The case is also similar to other companies collecting a huge number of garments. Bestseller blends the recycled fibers with the virgin fibers and saves material cost which allow them to set a competitive price for the final goods.

Table 5.2 on the next page shows how demand side and supply side competitive advantage is created for the lead firms and suppliers in different CEM typologies.

Firms		H&M	Inditex	Bestseller	C&A	Lenzing
CEM Types		Long Life Circular, Multiple Life Circular, Waste to Circular, Support Circular	Multiple Life Circular, Support Circular	Multiple Life Circular	Multiple Life Circular, Single Life Circular	Multiple Life Circular, Single Life Circular
Value Chain Activities: *Design*	Demand-Supply Side Competitive Advantage	Supply & Demand Side	Supply Side	Supply Side	Demand Side	Supply Side
	Competitive Advantage Winners	Lead Firm & Supplier	Lead Firm	Lead Firm	Lead Firm & Supplier	Lead Firm
Sourcing	Demand-Supply Side CA	Demand Side	Supply Side	Supply Side	Supply Side	Supply Side
	CA Winners	Lead Firm & Supplier	Lead Firm	Lead Firm	Lead Firm & Supplier	Lead Firm
Production	Demand-Supply Side CA	Supply Side	Supply Side	Supply Side	Supply Side	Supply Side
	CA Winners	Lead Firm & Supplier	Lead Firm & Supplier	Lead Firm & Supplier	Lead Firm & Supplier	Lead Firm
Logistics & Distribution	Demand-Supply Side CA	Supply Side	Supply & Demand Side	Supply Side		
	CA Winners	Lead Firm	Lead Firm & Supplier			
Product Use	Demand-Supply Side CA	Demand Side	Supply Side	Supply & Demand Side	Demand Side	Demand Side
	CA Winners	Lead Firm	Lead Firm	Lead Firm	Lead Firm	Lead Firm
Reuse & Recycle	Demand-Supply Side CA	Demand Side	Supply Side	Supply Side	Supply & Demand Side	Supply Side
	CA Winners	Lead Firm	Lead Firm	Lead Firm	Lead Firm	Lead Firm

Table 5.2 Firm's CEM Typologies and Demand-Supply Side Competitive Advantage and Competitive Advantage Winners.

5.6 Competitive Advantage Creation in CEMs through Sustainability Achievement

Sustainability achievement of the firm can be a source of competitive advantage. In circular economy models, apparel companies achieve sustainability that ultimately provides a competitive edge to the companies. Sustainability creates competitive advantage from three points of view. From Social Sustainability, Economic Sustainability and Environmental Sustainability.

The sustainability attainment is measured in a precise manner. Every analysis of this study was conducted from the value chain activities point of view. Different value chain activities were addressed separately in the measurement procedure. First the companies were listed according to their CEM typologies. Then company wise data were analyzed. Each value chain activity of each company is addressed, and sustainability attainment of every single value chain activity of each company was rated. For example, if Design of H&M attains economic sustainability, one point was given to economic sustainability. This is how every activities of every company were rated and given weights on the individual sustainability attainment. Finally, all the weights were aggregated and calculated under the CEM typologies to unveil the final output. As it is already showed that, value chain activities earn competitive advantage for the firms in different CEM types, the sustainability attainment of these types automatically converts into competitive advantage. The bigger the sustainability attainment, the more the competitive advantage. The final output is presented on the figure 5.3 on the next page.

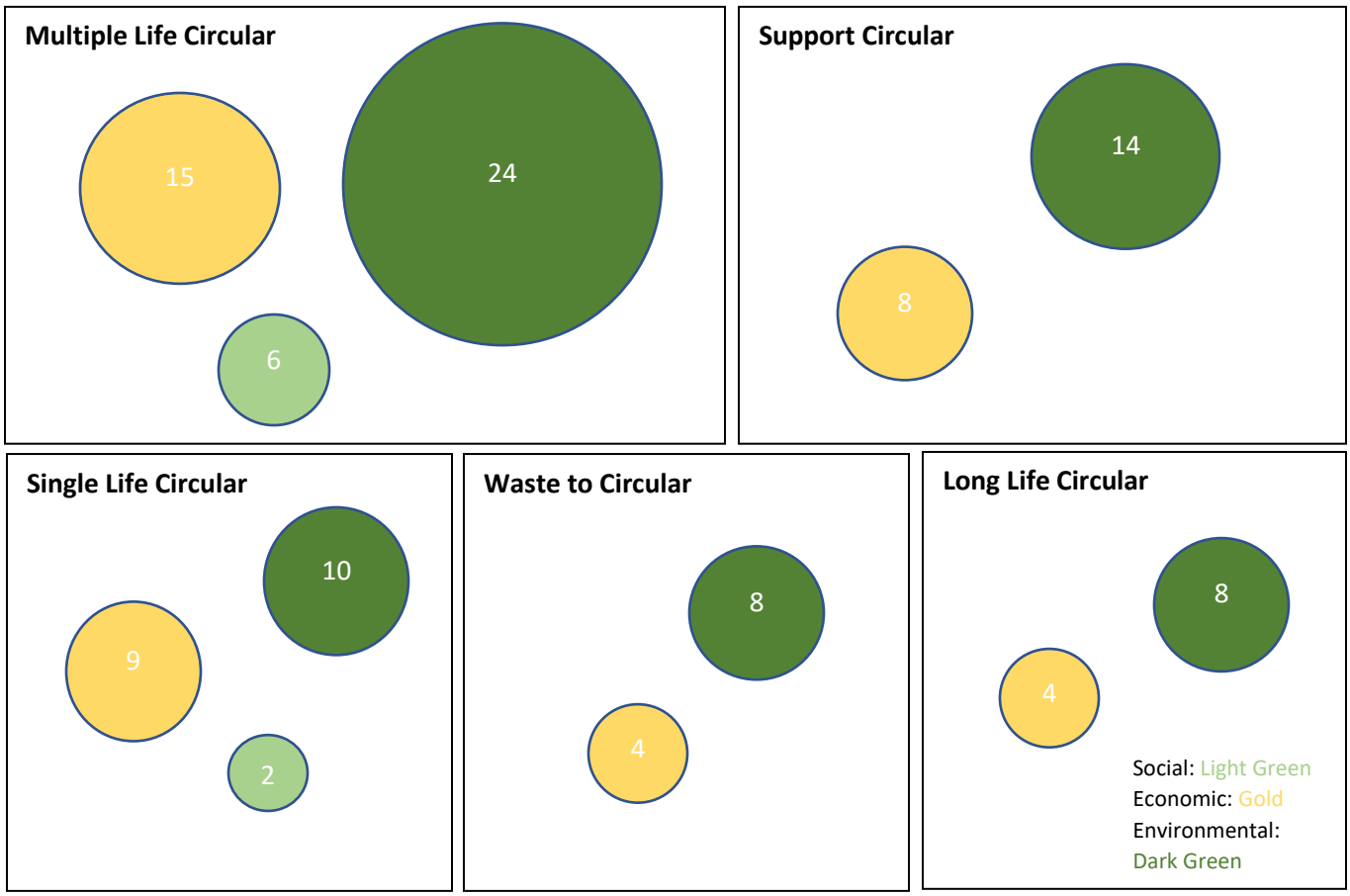

Figure 5.2 CEM Typologies and Sustainability Achievement

This bubble diagram exhibits the sustainability attainment of each CEM typologies. The light green bubbles represent the social sustainability attainment. The gold bubbles represent the economic sustainability attainment. The dark green bubbles represent the environmental sustainability attainment. The sizes of the bubbles represent the relative positions of particular sustainability attainment. All numbers in the bubble represent the total weighted score of that particular sustainability attainment.

5.6.1 Multiple Life Circular and Competitive Advantage Creation through Sustainability

Multiple Life Circular model includes Collect, Reuse & Recycle, Market Driving Circular and Recycle. This CEM attains all the sustainability types. It attains environmental sustainability by not sending the used garments to the landfill and attains resource efficiency. These wastes are turned into raw materials and unused resources let the firms to produce at low cost that create competitive advantage for the firm. Using collected clothing and using wastes to produce new

cloths allow the firms to attain economic sustainability. In this venture, firms produce products for a certain market segment who prefers sustainable clothing. This create competitive advantage for the firms. Apparel multinationals are aware of fair wages and fair sourcing which is a major area of customer concern after the Rana Plaza incident of Bangladesh. These are the areas where firms achieve social sustainability and it creates a positive impression on customers mind that acts as a source of competitive advantage.

5.6.2 Long Life Circular and Competitive Advantage Creation through Sustainability

Long Life Circular attains environmental and economic sustainability through which companies earn competitive advantage. Among the case companies, H&M is the only company following Long Life Circular model. They achieve competitive advantage in two CEM types. Long Life Cycle and Renew and Reuse. In Long Life Cycle, products are produced ensuring longevity which adds value for customers. In Renew & Remake model damaged and old products are given new life through which firms can capture additional value. In both model sustainability contributes in competitive advantage creation.

5.6.3 Waste to Circular and Competitive Advantage Creation through Sustainability

Waste to Circular has First Hand Circular as a circular economy model. H&M follows this model as a circular economy model. In this model the cut off materials and first-hand waste materials are used for product production. Basically, wastes are turned into raw material which provides additional value out of nothing. This process earns economic as well as environmental sustainability that creates competitive advantage for the firms.

5.6.4 Support Circular and Competitive Advantage Creation through Sustainability

In support circular Operations Circularity and Efficiency Circularity models are adopted by the apparel manufactures which achieve Economic and Environmental Sustainability. In both the forms achieving efficiency is the key. In Operations Circularity efficiency is gained through store operations and product distribution and delivery. For example, Inditex launched Green to Pack program which included the recycling of all materials used in the stores and use them again in delivery packaging. In Efficiency Circularity emphasis is given on achieving resource efficiency. In both the cases companies operate and saves resources that can be used to create competitive advantage in multiple ways.

5.6. Single Life Circular and Competitive Advantage Creation through Sustainability

Single Life Circular consist of one circular economy model, i.e. Zero to Nature. C&A and Lenzing follows this model. The most interesting thing about this model is, it doesn't produce any non-degradable waste where the products are also biodegradable in, home composting units. This feature has created a great demand for the product. This ultimately created a distinctive competitive advantage for the firms.

Chapter 6: Discussion of the Study

6.1 Introduction

This chapter presents a critical discussion on the analysis of the study. The previous chapter mostly presented the data findings but did not relate it with other influencing factors. Since this thesis stands on the international marketing grounds and it is one of the major objectives of this study to see the objects regarding this study through international marketing lens, it requires to discuss critically from international marketing point of view. The study has collected data on circular economy practices of different apparel multinationals. It has already analyzed the data and developed a comprehensive typology of apparel multinationals' CEM typologies from value creation point of view and the typologies and competitive advantage creation is also analyzed from the value chain perspective. Discussion starts with the typologies of CEM and value and competitive advantage creation for the apparel multinationals and secondly, the discussion will be based on the OLI framework and Competitive Advantage creation by CEMs in cross-border context. In third layer discussion will address the sustainability attainments by the newly developed typologies and their implications on competitive advantage creation for the companies.

6.2 Value and Competitive Advantage Creation of CEM Typologies

The study has developed five broad categories and nine sub categories of circular economy models. All the typologies have its own way of value and competitive advantage creation in marketing for the apparel multinationals. These circular economy models also create supply side and demand side competitive advantages for both the lead firms and for suppliers. Figure 6.1 presents the value creation and competitive advantage creation by the circular economy typologies. The value and competitive advantage creation and value creation in different CEM are addressed in following Sections,

6.2.1 Value and Competitive Advantage Creation in Multiple Life Circular Model

Multiple life Circular has three sub categories, i.e. Collect, Reuse, Recycle; Recycle; and Market Driving Circular. All these typologies have two things in common. First, all types give multiple lives to the fashion clothing and secondly, all of them create value for the company and customers. In Collect, Reuse, Recycle and Recycle model customers feel good to participate as they associate themselves with the planet saving activity. These activities are done globally that creates a global

brand awareness of the brands. These campaigns make customers feel proud to be a part of these activities. In addition, customers get discount vouchers while they submit the old clothing which offers monitory gains for the customers. Thus, it provides value to the customers. On the other hand, companies are receiving a lot of raw materials by spending a minimal amount which enables them to achieve economic as well as environmental sustainability. For Example, H&M have collected 20,649 tonnes of old clothes and Inditex have collected 12,229 tonnes of used cloths for recycling. These activities also create a positive perception on the brands in consumer mind. Companies like H&M has various investment in innovation projects to use the collected products. H&M has collaborated with Econyl, ARKET, Demito and Moral fiber for circular sourcing and have innovation collaboration with Worn Again, Re:newcell and Hong Kong Research Institute of Textiles and Apparel (HKRITA). Such innovations allow these types of companies to inject different kinds of inputs to be more productive throughout the value chain from raw materials to energy to labor that ultimately enhances resource productivity which creates competitive advantage for the companies (Porter & Linde, 1995). This CEM can also drive market demand rather following the trend. In Market Driving Circular, new demand is created through innovative circular products which creates competitive advantage across the market for the firm. Although, these are the start of driving some niches, the future is going to be mainstreamed. In this CEM, lead firms seek for sustainably produced products from the suppliers. It makes supplier aware about the circularity in their business model. Being circular, suppliers can earn more orders from the global apparel companies who seek for circular sourcing from the international market. This is how this model create competitive advantage for the suppliers.

6.2.2 Value and Competitive Advantage Creation in Long Life Circular Model

Long Life Circular has two sub categories, i.e. Long-Life Cycle and Renew & Remake. Both the types are value generating options for apparel multinationals. Long Life Cycle products come up with extra value of longevity for customers which make the customers feel worthy buying the clothing and can use for a long period of time. Most of the customers like their cloths to be a strong one which creates a positioning for the firm. Products under this model are durable in nature. This makes the brands preferred to customers as a durable brand. Manufacturing these types of products requires especial type of supplier who are capable of producing durable goods. Firms sources these materials from foreign locations in most of the times to capture value from cross-border sourcing.

This capability also creates competitive advantage for the supplier. Renew & Remake let the companies use and earn revenue from collected and unsold products. For example, H&M has a brand named 'AFOUND' which sells the unsold products at a discounted price. Some other H&M brands including Cheap Monday and Monki who often offers modification and upgrading of the products. This model allows customers to purchase and upgrade product at a discounted rate which enhances customer loyalty and satisfaction towards the brand. It gives the customers superior values and firm earns value to win over the competitors. In international setting this is beneficial for firms as organizations compete on superior customer value delivery as a major source of competitive advantage (Woodruff, 1997).

6.2.3 Value and Competitive Advantage Creation in Waste to Circular Model

Waste to Circular has one sub category, i.e. First Hand Circular. This circularity model allows the companies to save the cut off materials which is normally considered as waste and recycle them into raw materials without waiting for the old clothes to be recycled. This allows to inject raw materials for a minimal price that ultimately allows to gain efficiency in raw materials. H&M has a brand called 'COS' which sells products made from cut off materials. H&M need to maintain suppliers globally to source and produce products from byproducts. Good supplier regulations by the lead firms also create competitiveness for the firm (Porter & Linde, 1995). Saved value on raw materials through by-product utilization allow the companies to achieve process benefits that creates competitive advantage (Porter & Linde, 1995). In addition, this model has an opportunity to create a new market or just add the input with the mainstream production and earn value out of it in competitive global market.

6.2.4 Value and Competitive Advantage Creation in Support Circular Model

Support Circular model includes Operations Circularity and Efficiency Circularity as sub categories. Operations circularity incorporates the circularity practices in day to day operation, especially in store operations and product sales and delivery. Global apparel companies have thousands of stores globally. Achieving operations efficiency in stores comes with a very big impact on the final balance sheet. Inditex has introduced Green to Pack program in 2017 under which program they reduced the thickness of delivery boxes that end up using two million boxes. Lower packing cost generates product benefit all over the market which act as a source of competitive advantage (Porter & Linde, 1995). The program saved 1,700 tonnes of virgin paper;

1,500 tonnes of plastic; 110 million recirculated hangers; and 1,010 million recycled alarms. It helps to imagine the efficiency gained throughout the market. On the other hand, Efficiency Circularity allows the companies using minimum resources to produce and perform business operations. In store operations and sales activities these two models allow the companies minimize the operations cost and deliver a message on responsible behavior. Efficiency circularity plays even bigger roles by optimizing the energy and resource utilization which creates immediate economic benefits for the companies. These models also contribute on the brand building activities. Both the circular economy models help the lead firms achieve cost leadership which is a significant source of competitive advantage (Porter, 1985). The efficiency models also help the suppliers to produce products using lower resources and the outcome is cost minimization which creates competitive advantage for the suppliers as well.

6.2.5 Value and Competitive Advantage Creation in Single Life Circular Model

The Fifth CEM model is Single Life Circular which has one sub category titled ‘Zero to Nature’. This model serves the purpose of companies serving the environment conscious customers who always look for biodegradable products. This model creates value for the companies who focuses on the green niches of the market and takes biodegradability of wastes on the highest priority. In 2017 C&A introduced Gold Level Cradle to Cradle T-Shirts which created a good hype in the market. The T-shirt is a biodegradable one which is decomposable in, home decomposing units. Introducing this t-shirt involved a global value chain. The biodegradability is the biggest value added with the product for the companies following this model. It is not mainstreamed to produce bio degradable clothing. Only a number of suppliers can produce 100% decomposable clothing which is a great source of competitive advantage for the supplier which allows the suppliers enjoy competitive advantage on this area. This is almost similar with Lenzing who produce cellulose fibers from wood pulps which is also bio degradable. This special kind of raw material creates competitive advantage from differentiation point of view (Porter, 1985) which is both shared by supplier and lead firm in competitive global market.

Figure 6.1 shows how the CEM typologies create value and competitive advantage.

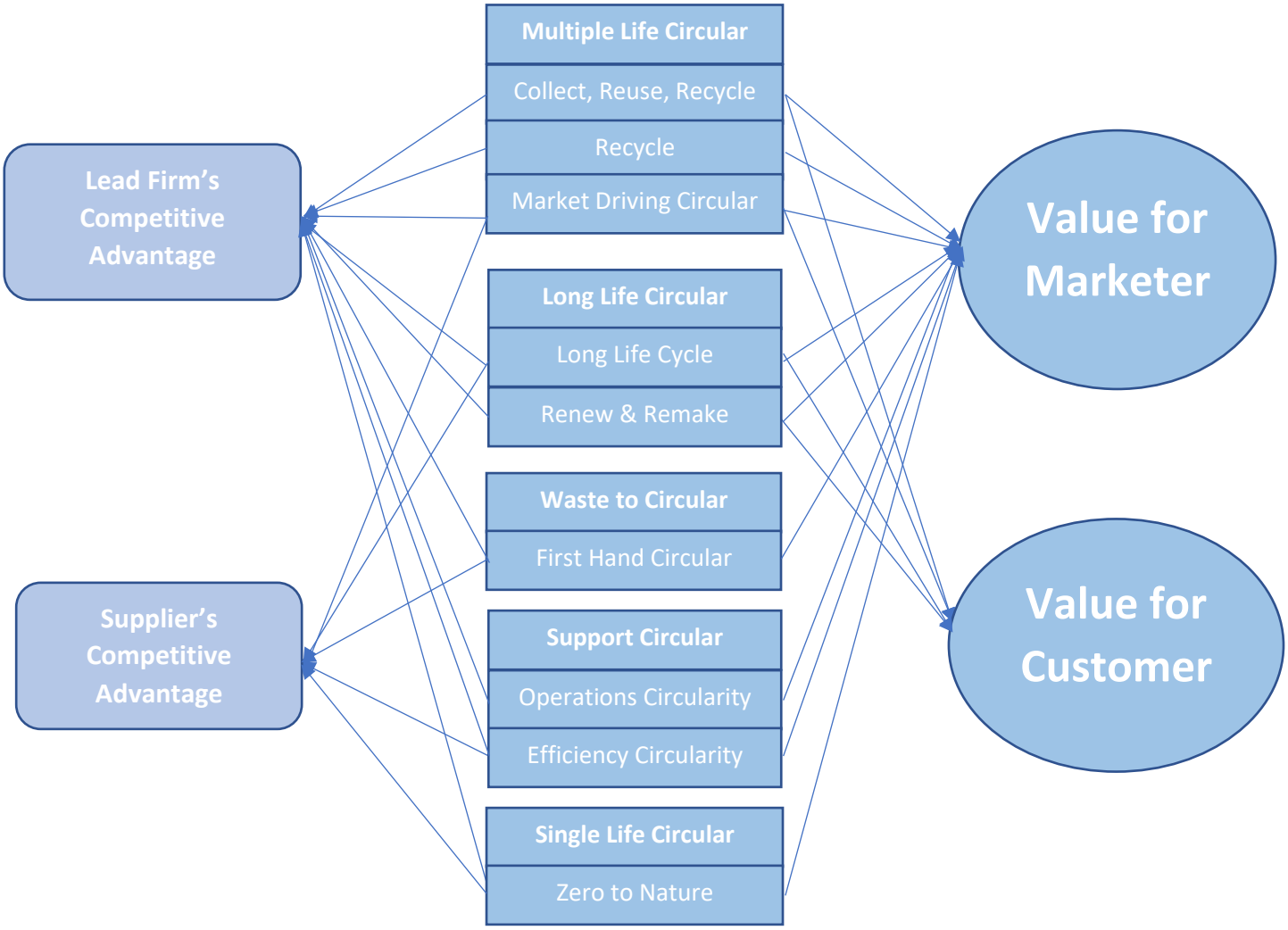

Figure 6.1 Value Competitive Advantage Creation. Through CEM Typology

6.3 Competitive Advantage from OLI Perspective of CEM

Companies go for internationalization with some ownership advantages, location choices and internalization decision as stated in Dunning's (1979) OLI framework. Apparel companies adopting CEM look for competitive advantage in the global market which can be achieved by Ownership Advantages, Location Choices and Internalization and Externalization of some value chain activities.

Ownership addresses the advantages why some firms are able to go for internationalization not the other firms can go for it, it also advises that successful companies to have some firm-specific advantages that help the firms to overcome the costs of doing business in international markets

(Neary, 2009). In CEMs apparel multinationals can earn competitive advantage by owning some advantages related to value chain activities. These include Owning Designs, Skills, Relationships, Research and Development, Policies, Management Capabilities and Technological advancements. In international market setting where business is done through sourcing from one market and selling to another market, owning intangible assets facilitates value creation. All the case companies own these intangible resources to perform smoothly in global market in order to capture value and competitive advantage. There is an exception only for Lenzing who not only owns intangible assets, but also own production facility which is an advantage because it is set up in home country and their customers are located mostly in close international market which allow them to have more control over production and achieve competitive advantage out of it.

Location advantage involves the decision of firm's location in foreign market (Neary, 2009). Circular Economy models create competitive advantage for the apparel multinationals in both demand side and supply side. Apparel multinational's internationalization are always foreign country based as they source from all over the world to sell them in home market as well as in different foreign market. In demand side competitive advantage is created in CEM by matching customer demand that is normally circular in nature. For example, Bestseller brand Name it produces clothing for children in foreign location which is made of recycled fabrics and has a high demand in Denmark, the home market. In most of the cases CEM creates supply based competitive advantage which is achieved from choosing the right foreign location for production and sourcing. All the case companies except Lenzing has production plant in Bangladesh and in other south Asian country those capitalize low wages of those countries which ultimately turn into competitive advantage for the firm. However, interestingly, firms source raw materials most of the times form other countries where they don't have production plant to achieve competitive advantage in production using efficient sourcing policies.

Internalization includes the firm's tendency to internalize international structure (Dunning and Lundan, 2008) which is not applicable for most of the value chain activities of global fashion multinationals. In CEM firms most likely internalize intellectual capabilities and activities like Design, Technology management, Partner relationship which facilitate the CEM value chain activities including Design, Production, Logistics, Product use and Reuse & Recycle. Although same activities are also externalized in CEM to achieve competitive advantage by the firms.

Apparel business is very much different from other international businesses which include very complex value chain and achieves competitive advantage through externalization mostly.

6.3 Sustainability as Competitive Advantage

In international marketing point of view, meeting sustainability standards are a must. The apparel multinationals normally are among the biggest companies of the world. Every single step by these companies can make a big impact. In global setting companies always face different traditional challenges like host country trade-tariff issues, dumping issues, human resource issues, cultural conflicts and so on. In recent times the biggest issue is becoming the sustainability issue of the company which directly effect on the market positioning of the company. Circular economy models can be solution to this challenge. Circular economy models achieve sustainability for the firm. The models contribute on the social, economic and environmental sustainability attainment of the company. Adoption of circular economy models are not the responsibility activities only, anymore. It is going to be mainstreamed with the inclusion of circular economy practices. Customers are getting more conscious about the sustainability issues and their preferences are also rounding up around this. The demand and consumption paradigm are getting changed so meeting sustainability standards are becoming the usual practice.

In this changed global market scenario, sustainability attainment can be a source of competitive advantage. Firms in apparel manufacturing industry have already started to believe this. Case firms of this study hold sustainability as a core corporate value on which they try to capitalize the market. Meeting sustainability criteria through adoption of CEM has become the source of competitive advantage for all the case firms. The analysis chapter showed how different Circular Economy Models create competitive advantage for the firm by attaining social, economic and environmental sustainability. This study is conducted on a small-scale case analysis that has found some evidences among the case companies. At this point, the thesis wants to suggest some hypothesis which could be proved by for future large-scale empirical studies. The hypotheses are,

Hypothesis 1 Multiple Life Circular earns Competitive Advantage through Environmental Sustainability.

Hypothesis 2 Multiple Life Circular earns Competitive Advantage through Economic Sustainability.

Hypothesis 3 Multiple Life Circular earns Competitive Advantage through Social Sustainability.

Hypothesis 4 Long Life Circular earns Competitive Advantage through Environmental Sustainability.

Hypothesis 5 Long Life Circular earns Competitive Advantage through Economic Sustainability.

Hypothesis 6 Waste to Circular earns Competitive Advantage through Environmental Sustainability.

Hypothesis 7 Waste to Circular earns Competitive Advantage through Economic Sustainability.

Hypothesis 8 Support Circular earns Competitive Advantage through Environmental Sustainability.

Hypothesis 9 Support Circular earns Competitive Advantage through Economic Sustainability.

Hypothesis 10 Single Life Circular earns Competitive Advantage through Environmental Sustainability.

Hypothesis 11 Single Life Circular earns Competitive Advantage through Economic Sustainability.

Hypothesis 12 Single Life Circular earns Competitive Advantage through Social Sustainability.

PART IV

Chapter 7: Findings of the Study

7.1 Introduction

This chapter presents the findings of the study. The findings are presented based on the analysis and discussion conducted on previous chapters. Findings of the study starts with the developed typologies of circular economy model. Then the value chain activities are presented. The last part presents the findings regarding value creation; competitive advantage and sustainability. The findings are addressed on precise manner.

7.2 Typologies of CEM

This study is conducted on five apparel multinationals and their circular economy practices. The companies differ in their adoption of circular economy models. These differences and versatility of the circular economy practices helped this study to develop different typologies of circular economy models. Five broad categories and nine sub categories of CEM have been developed. The topologies are as follows,

1. **Multiple Life Cycle**
    a. Collect, Reuse, Recycle
    b. Recycle
    c. Market Driving Circular
2. **Long Life Circular**
    a. Long Life Cycle
    b. Renew & Remake
3. **Waste to Circular**
    a. First Hand Circular
4. **Support Circular**
    a. Operations Circularity
    b. Efficiency Circularity
5. **Single Life Circular**
    a. Zero to Nature

7.3 CE Value Chain for Apparel Multinationals

The study was conducted on the value chain perspective of the apparel manufacturers. Six value chain activities were identified performed by the case companies. The value chain activities are,

a. Circular Design
b. Circular Sourcing
c. Circular Production
d. Logistics and Delivery
e. Circular Product Use
f. Reuse and Recycle

The value chain activities form the following circular value chain of global apparel multinationals adopting CEM.

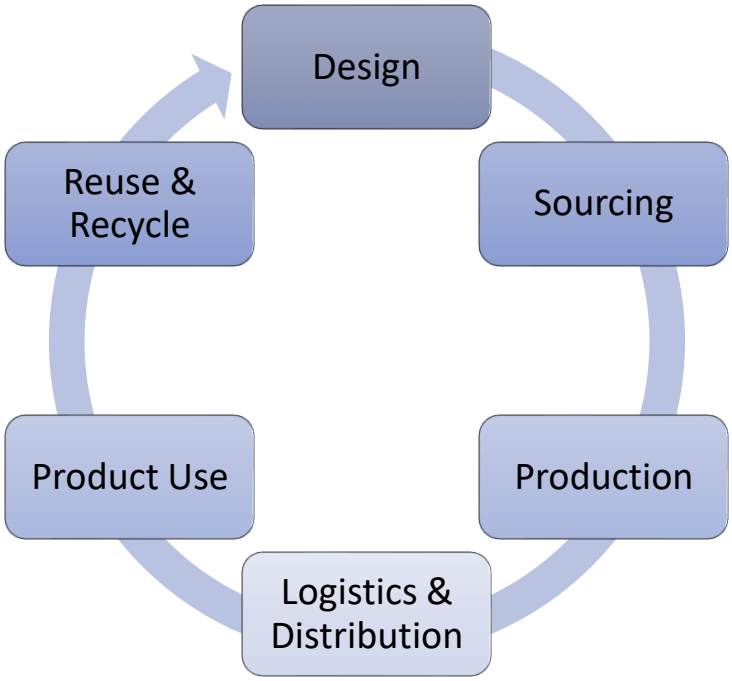

Figure 7.1 CEM Value Chain for Apparel Multinationals

7.4 OLI Factors of Competitive Advantage in CEM

The study has found some advantages based on what multinational companies adopt circular economy model. These advantages can also be termed as motivations for internationalization. The advantages are as follows,

a. Design
b. Technology
c. Skills
d. Relationship
e. Management Capability
f. Research and Development

These advantages allow the firms to engage in internationalization in home and foreign locations. Based on advantages, capabilities, efficiency and location perspective firms take the decision of internalization and externalization of value chain activities.

7.5 Value and Competitive Advantages by CEMs

CEM helps to create value and competitive advantage for the lead firms as well as for the suppliers. Lead firms and Suppliers gain competitive advantage from different value chain activities of circular economy model. The earned value and competitive advantage of Lead Firm and Suppliers based on the value chain activities are as follows,

1. Lead Firms gain competitive advantage on circular design.
2. Lead Firms and Suppliers both gain competitive advantage on circular sourcing.
3. Circular production creates competitive advantage for both the lead firms and suppliers.
4. Logistics and Distribution create competitive advantage for both the supplier and lead firms.
5. Lead Firms earn competitive advantage at the product use stage of the value chain.
6. Lead firm gains competitive advantage while reuse and recycle stage of the value chain.

One interesting finding of this study is the inclusion of supplier's competitive advantage. Circular economy provides competitive advantages to different parties associated with it. On the other hand, it has created a new compliance for the suppliers. Suppliers adopting circularity will win more orders from the lead firms which will help them to stand out in crowds.

7.6 Additional Findings

All the above-mentioned findings are relevant to the research questions and research problem. There are some additional findings of the study from the institutional point of view. All the case companies are from Europe because other companies failed to meet the criteria set for this study to be included as case companies in this study. European intuitions are stronger than other continents which ensures the good governance and good practice of the firms. Among the case firms, Scandinavian firms takes the top position in sustainability and circular economy. For example, H&M leads the global fashion industry in terms of circularity and sustainability which is the result of strong local institutions.

Chapter 8: Conclusion

Multinational enterprises always focus on the growth like oxygen. The growth driven model makes them so big that makes them a major player from every aspect. The study started with the negative impact of these big boys on the environment. As the growth is oxygen and companies always look for competitive advantages from their value chain in international marketing perspective through continuous business expansion and profit maximization. This is possible to achieve without hampering the mother planet. This was tried to unfold in this study. The study was carried out on the circular economy perspective which seems to be the savior of the world by providing competitive advantages to the companies through sustainable solutions.

The study was conducted on five major players on the global apparel industry who have adopted circular economy model. The research was carried out on the theoretical foundations backed by data from the case companies. This study tried to contribute on the value chain theory and competitive advantage theory in relation to circular economy model. The collected data were analyzed in a way that can provide answers to the research questions and solve the research problem. The answers of the research questions present three major contributions from this study. First, this study has developed typologies of Circular Economy Model of global apparel industry. Secondly, the study showed the means of value creation of CEM typologies. Thirdly, the study unfolded the way of creating competitive advantages for the lead firms and for the suppliers.

This study explored different application of CEM by renowned apparel multinationals of the world. The study also explored the impacts of CEM types on value chain activities from the international marketing perspective. The findings show how the firms enjoy competitive advantage and how CEMs create values. These could be the source of motivations for the managers of global apparel industry in achieving social, economic and environmental sustainability which is the managerial implication of the study.

In a nutshell this study starts a new dimension of circular economy literature by incorporating the competitive advantage perspective to the existing literature of circular economy. On the managerial perspective it also shows a new way of getting value out of the sustainability perspective. More research on this area incorporating large sample size would be able to bring more interesting insights and stronger theoretical foundations on this area of study.

Chapter 9: Limitations and Future Research Scopes

This thesis tried to address every aspect related with the study. In spite of being aware of the scopes and the requirements from the study, there are still some limitations of the research which might be addressed by future studies. The limitations of the study start with the methodology which used secondary sources of data and used qualitative method taking a small sample size. The data collected for the studies were all recent data. No data were collected from previous years to show a comparison through the time series analysis. The origin of the case companies also a limitation of the study. All the case companies are from Europe with similar market and institutional setup. This poses a question mark against the global generalization of the thesis outcome. Another limitation of the study could be found from the theoretical aspect. More theoretical aspects could have been incorporated with the analysis.

Limitations of any work are not the weakness of the work rather it provides a scope for further developments. All the limitations stated here could be used as future research scopes in following ways,

Limitations	***Future Research Scopes***
The study has taken small sample size and used secondary data to analyze using qualitative methods.	Future research could be conducted on the similar area taking a large-scale study using qualitative or quantitative methods or using mix methods.
The research was conducted on the data of recent years.	A similar kind of studies could be conducted in future collecting data from previous five years to see the trend through time series analysis.
The research chose only European Firms.	A future study could be conducted on the firms from Europe, America and Asia to find more globalized and generalized research output.
The study lacks enough theoretical inclusion.	There is a scope for future studies on this area to incorporate institutional and systems perspective of internationalization theories.

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