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An Overview of the Circular Economy and Strategic Management Analysis for Sustainable Entrepreneurship

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Abstract

The main objective of this work “An overview of the Circular Economy and Strategic Management Analysis for Sustainable Entrepreneurship” is to analyze the circular economy, its evolution in recent years and its differentiation from the traditional economy model, including multiple strategies applied from the Sustainable Entrepreneurship sector. The aim is to study the geographical evolution by region, as well as its barriers and its competitive advantages within different business sectors.

This investigation explores deeply the circular economy model and the best alternatives for a Sustainable Entrepreneurship niche, to implement better practices and improving production and consumption. It also includes a research focus on textile and food industry.

After reviewing the information on the Circular Economy within the sectors involved, as well as the theoretical framework, the characteristics, evolution of the economy, benefits, opportunity areas and the Sustainable Entrepreneurship key elements, this paper support potential alternatives to improve production and consumption practices to analyze and to identify optimization process and potential alternatives.

Based on the results of the investigation obtained, this study concludes by proposing management suggestions for these business models.

Phase 1: Overview of the theoretical framework

Phase 2: Development of the theory and management strategies

Phase 3: Business sectors analysis

Phase 4: Conclusions, comments, and proposals

Key Words

Circular Economy. Economy. Development. Business. Entrepreneurship. Sustainability. Food Industry. Textile Industry.

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CHAPTER I

1.1 Introduction of the Study

The main objective of this work “An Overview of the Circular Economy and Strategic Management Analysis for Sustainable Entrepreneurship” is to deeply research the Circular Economy Model, its evolution in recent years and its differences from the Traditional Economy and geographical evolution by region, as well as the multiple strategies applied from the Sustainable Entrepreneurships. The objective is to study the opportunity areas from the Entrepreneur and Business Sector, its benefits, and barriers, within different business activities, such as the textile or food industry.

First of all, this work is going to develop the theoretical framework, where the three axes of the research are presented: firstly, the circular economy and its evolution, characteristics and different elements that generate competitive advantages for the companies, secondly, environmental, economic, and social benefits and barriers, and, thirdly, strategic management applied to different industries.

This section shows the panorama of the topic studied from the international and regional level. Subsequently, similar circular practices are mentioned to be analyzed, as well as the relation between Circular Economy and Sustainable Development. Following by the methodological framework of the research is the proposal guideline for the Sustainable Entrepreneurship Sector.

Likewise, the strategies collected and studied are presented according to the different stages of this work, the conclusions and recommendations that were raised from the research are indicated to contribute better practices for the Sustainable Entrepreneurship Sector and to reduce to the maximum the negative risks of the enterprises.

The final objective of this work is to disseminate the concept of Circular Economy and give practical guidance to Sustainable Entrepreneurship, but also the local entities, especially public administration, and managers, in order to boost and to promote the Circular Economy at different levels, both private and public sector, including its implementation in the society.

The Circular Economy is applicable to different scales and agents: private sector, public sector, citizens, etc. The purpose of this publication is to bring the user closer to this model, evidencing the implications on the current economic system and the need for a paradigm shift, focusing on the agriculture and textile sector and how the circular economy fits within itself, proposing and encouraging a reflection on the role of the consumer and the consumption.

The main objectives of this work are the following:

1. Describe the relationship of Sustainable Entrepreneurship Sector with the Circular Economy and the importance of managing appropriate strategies.
2. Get to know the international and national ecosystem of the Circular Economy and the application of this concept within the Textile and Food Industry.

3. Analyze the risks, threats, and opportunities, and to propose suitable strategies according to the current stage of the entrepreneurial process.

The main inquiries of this work are the following:

1. How does strategic management in Circular Economy contribute to Sustainable Entrepreneurship?
2. How is the relationship between a Sustainable Entrepreneurship and the Circular Economy and how related is the strategic management applied on it?
3. How are the actors involved in the international and national ecosystem of the Circular Economy?

1.2 Overview, Principles and Characteristics of the Circular Economy

According to The Circularity Gap Report, over the past four decades, global material use has nearly tripled and is projected to grow to between 170 and 184 billion tons by 2050. On the other hand, global greenhouse gas emissions are projected to reach 60 billion tons by 2050, even with all current mitigation policies in place. (The Circularity Gap Report, 2019).¹ It is urgent to take action on the matter and remember the goal of zero emissions by 2050 as well as maintaining the increase in the global average temperature at 1.5°C.

Currently, the world economy is only 9% circular. It is estimated that a reduction of just 1% in the consumption of resources in the global economy could mean an annual saving of approximately 840 million tons of metals, fossil fuels, minerals, and biomass, as well as 39.2 trillion liters of water. (The Circularity Gap Report, 2019).¹ This reduction in the consumption of raw materials could translate into a potential saving for the global economy.

Circular Economy is defined in the report "Towards a Circular Economy" by the Ellen MacArthur Foundation, the world's leading entity in this area, as an economic model that is intentionally regenerating, that tries to ensure that products, components, and materials maintaining their maximum utility and value and distinguishing between technical and biological cycles. (Ellen MacArthur Foundation, 2015).² This new economic model tries, in short, to decouple global economic development from the consumption of finite resources.

In similar terms, the Spanish Circular Economy Strategy "Circular Spain 2030" defines the Circular Economy as a model in which the value of products, materials and resources are maintained in the economy for as long as possible, promoting their efficient use in production and consumption and in which the generation of waste is reduced to a minimum, which constitutes an essential contribution to achieving a sustainable economy, conducting and efficient in the use of resources. (Circular Spain 2030, 2015).³

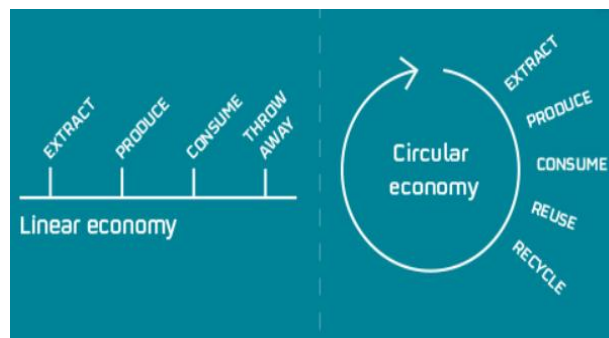
Taking the cyclical model of nature as an example, the Circular Economy is presented as a system for the use of resources where the reduction of elements prevails, minimizing production to the bare minimum, and when it is necessary to make use of the product, commit to reuse elements that due to their properties cannot return to the environment. It advocates

using as many biodegradable materials as possible in the manufacture of consumer goods so that they can return to nature reducing the ecological impact.

The Circular Economy proposes a change in the way society is related to nature, since it aims to prevent natural resources from being depleted. It seeks to have a sustainable evolution, through three components: micro level, where consumers and companies are, middle level, where the economic agents are, and the macro level, which involves cities, regions, and governments.

Unlike the Linear Economy, in which waste is generated during and after the production process, this model seeks to ensure that waste can be reused and recycled. (European Commission, 2015).⁴ The traditional model is based on the linear system of production and consumption, it is a throwaway model, which is based on the extraction and exploitation of natural resources to transform them into goods, consume them and finally generate waste.

Figure I: Illustrated concept of Linear Economy and Circular Economy.



Resource: Ellen MacArthur Foundation Report, 2015.²

The basics of the Circular Economy are based on the Multi-R System, which consists of an extension of the rule of the three ecological Rs (3R): Reduce, Reuse and Recycle. (Institute for Sustainable Manufacturing, 2016).⁵ There are explained in the following section:

- Reduce: The most important R of the three. It is about reducing the production of waste, the greatest way to help the environment.
- Re-use: The second most important R. It is based on reusing objects and resources to give them a second useful life.
- Recycle: The latest R, but one of the most popular. Converting objects that cannot be restored into new materials. Through selective collection and recycling, the need for new materials is reduced, but energy is required for their transformation and reuse. Therefore, it would be the last option to consider.

Considering that waste is a resource, the circular model seeks to reduce the volume of waste generated and develop more responsible consumption habits, reduce the amount of waste sent to the landfill and thus reduce the carbon footprint.

By implementing reuse and recycling systems allows waste to be given a new life. This change could include the creation of new jobs linked to the development of repair, maintenance, reuse,

redistribution, and remanufacturing services. But also, to ensure correct use of the selective collection and recycling measures implemented.

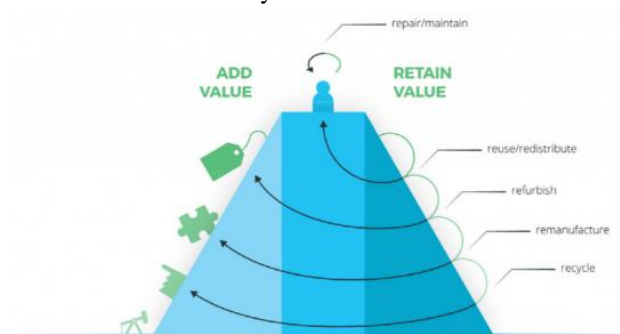
Then comes the Multi-R System, which consists of an extension of the 3R rule. (Institute for Sustainable Manufacturing, 2016).⁵ There are the following:

- Rethink: It is based on questioning whether there are more efficient, ecological, or sustainable alternatives to cover that need, avoiding products that have a great environmental impact.
- Redesign: Involves the re-processing of already used components for restoration to their original state or a like-new form through the reuse of as many parts as possible without loss of functionality. It is about translating the above issues into a tangible and lasting design, also facing planned obsolescence.
- Remanufacture: It is about maximizing sustainability in production and respecting the above issues. Involves manufacturing next-generation components using materials recovered from the previous life cycle or previous generation of components.
- Repair: It is based on prolonging the useful life of products through repair and preventing them from becoming obsolete.
- Redistribute: It is about distributing and allowing the sharing of products or materials, extending their useful life, and reducing the need to produce new ones.
- Recover: It consists of finding solutions to recover apparently non-recyclable products, such as energy or water.

The dilemma for the Circular Economy is to achieve a higher waste recycling rate, this begins by introducing the recyclability criterion in decision-making on product design. It is not easy to recover waste from products whose design has not considered their recoverability at the end of their life cycle.

The extension of this system is looking for the concept of zero waste. (Environmental Science and Pollution Research, 2022).⁶ However, it is not always possible to avoid the generation of waste, so it must be considered as a source of resources and value through its recovery.

Figure II: Value Pyramid of the Circular Economy.



Resource: The Circularity Gap Report, 2019. ³

It is also important to analyze the relationship with Sustainable Development and the Circular Economy, they seem to incorporate the notion of fairness in the use of resources between generations. However, Sustainable Development is perceived as a set of initiatives that have been implemented with linear thinking. (Environmental Science and Pollution Research, 2022).⁶

The Sustainable Development addresses the current problems, but not the causes, something that the Circular Economy does. In contrast, the Circular Economy is also distinguished as a tool for Sustainable Development, because it is necessary for its proper functionality. Both concepts have a compensatory relationship and are beneficial between them.

In other words, the Sustainable Development sets the objectives while the Circular Economy is a tool to address some of the causes of these problems.

1.3 Theoretical Framework of the Circular Economy Model

The Circular Economy Model implies a cyclical flow of reuse of natural resources. (Ingulfsvann, 2017).⁷ This model is inspired by the functioning of the environment, due to its dynamics. For example, animal waste often serves as fertilizer for their own food, which implies a reuse of existing and generated resources. To explain this flow in greater detail, it is fundamental to describe the life cycle of a product, which turns out to be the center of the Circular Economy System.

The Circular Economy is made up of two factors: Nature and Culture. (Ingulfsvann, 2017).⁷ It is important to explain the function of these elements is to understand their role within the circular system.

First, Nature has two essential components: matter, and energy, which generates a continuous flow through the system. (Ingulfsvann, 2017).⁷ The first one refers to raw material and those that are generated through it. The second one refers to renewable and non-renewable energy. It turns out to be an essential element since its characteristics are the inputs necessary for its operation.

Second, Culture is related to a social construction that defines behavioral parameters in a society or group of individuals, which influence the actions of people, organizations, cities, and governments. (Ingulfsvann, 2017).⁷ It is made up of two important factors aligned to this model: values and knowledge, which guides behaviors through shared standards, in this case, focused on environmental responsibility.

The Circular Economy provides a vision of the different stages of a product's life cycle: production, distribution, consumption, and redistribution, in order to understand in a better way, the circular responsibility.

In the first place, production begins with the input components of nature, so it is necessary for the operation and the generation of the product. When finished, it is distributed; this second

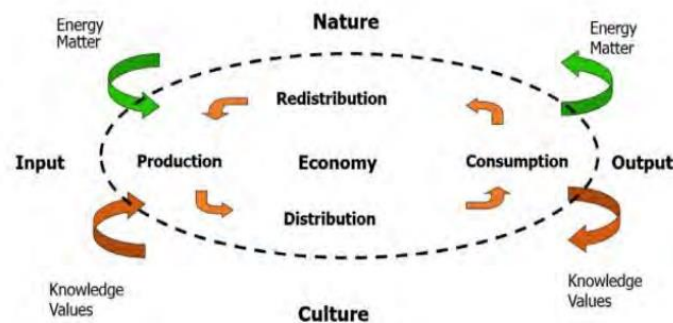
phase is important because the companies must guarantee the traceability of their products and efficiently reduce the environmental impact, both in routes, packaging, and other practices.

The third stage involves the responsible consumption of a product, either for a consumer or a company, where the efficiency of the use of the product can occur, through its reuse, generating it to be maintained for a longer time within the economy. To do this, it is suggested that companies could revolutionize their business design by giving the customer the option to return the product after having used it, hence extending its life cycle.

Finally, the fourth stage is redistribution, where the waste can be recovered as an organic medium that can be returned to nature or as part of a resource that can be re-incorporated into another production process.

Thence, the circular value chain proposes the transition from a linear model to a circular one that implies that the ends of the value chain are tied. (Ingebrigtsen & Jakobsen, 2017).⁸ In this way it is possible to connect the objectives for the reprocessing of waste with a greater use of recycled materials.

Figure III: Circular Economy System.



Resource: Ingulfsvann, 2017.⁷

CHAPTER II

2.1 Evolution of the Circular, Traditional and Linear Economy

According to the Report “Managing the Transition to a Circular Economy”, published by the Organization for Economic Co-operation and Development, the evolution from Linear to Circular Economy was based on three stages. (OECD, 2019).⁹

The first stage was the linear economy, which began in the sixties by the industrial revolution, through the origin of the exploitation of resources that ignored the limits of the environment. The linear economy reflects the time when it was mistakenly assumed that natural resources were unlimited, and the environment had sufficient capacity to assimilate pollution and waste.

The Linear Model generates a great deterioration of resources through the elimination of capital from the environment, and by the reduction in the value of the natural capital generated by the pollution caused by waste. (OECD, 2019).⁹ It can even occur in the process of acquiring resources.

It takes advantage of the volume of material inputs to produce a final product, which would be used and then discarded. That is why Linear Economy is mostly known as a business model that supports transformation of natural resources into waste through production.

The effect of this has been the growth of consumer and extractive economies, based on obtaining progressively cheaper products and increasing their consumption, giving rise to an important development of the economy, and allowing people to have access to more and more products.

However, it has brought with it an increase in negative external factors and economic consequences. (OECD, 2019).⁹ For example, resource price volatility and supply risks, economic losses, structural residues, and supply shortages since natural resource deposits are finite.

As a consequence, there have been financial crises and social effects, such as the increase in social inequalities, dehumanization of society, labor exploitation, massive migration from the rural areas to the cities, and job losses.

These aspects have brought environmental concerns such as climate change, desertification, and soil degradation, as well as loss of biodiversity, pollution of the oceans and an increase in natural disasters.

The second stage presented for the Circular Economy was when the business environmental change began to become evident, where it is considered that some of the factors that influenced this transition were natural disasters, social needs, the generation of added value and environmental policies and regulations.

In this sense, the protection of the environment began to be considered, giving rise to the concept of Green Economy. (OECD, 2019).⁹ Lastly, the third economic model appears, the Circular Economy, at the beginning of the 1990s and it has been applied by some organizations since then.

Although there were signs of this type of model since 1966, this model became more visible after being presented at the World Economic Forum in 2012, emphasizing its advantages and the development it could generate in the economy. (World Economic Forum, 2022).¹⁰

In this way, the Circular Economy was originated from the consideration of caring for the environment within the traditional economic process, by closing the industrial circle by focusing on the product life cycle.

Making the most of the available material resources is pursued by the Circular Economy. (The Circular Journey of Amsterdam, 2020).¹¹ In this approach, waste is utilized, product life cycles are prolonged, and a more sustainable production model is gradually formed. All the materials that can be recycled are reinvested in the economy as new raw materials, consequently increasing security of supply.

This new model of manufacturing and consumption guarantees long-term and sustainable growth. (Dougherty & Hardy, 2016).¹² The Circular Economy enables resource optimization, lower raw material consumption, and waste recovery by recycling or giving it a new life as a product.

The idea arises from imitating nature, where everything has value and everything is used, where waste becomes a new resource. In this way, the balance between progress and sustainability is maintained.

2.2 Analysis of the Social Context and International Political Priorities

The social and political context allows to understand and to align the promotion plan to the Circular Economy with the local, regional, and international objectives, based on the sustainability context, in order to generate synergy between all parts involved and ensuring the current agenda.

At regional level, under the coordination and leadership of the Ministry of Agriculture and Fisheries, Food and Environment (Ministry of Ecological Transition) and the Ministry of Economy, Industry and Competitiveness, the autonomous communities and the Spanish Federation of Municipalities and Provinces, arranged the "Spanish Circular Economy Strategy 2030". (European Parliament, 2023).¹³ Focused on recent issues such as production, consumption, waste management, secondary raw materials, and water reuse.

The Circular Economy has been acquiring more and more importance, not only in the academic field but also in the political, economic, business, and social fields in Spain. But it requires responsible and coordinated action by the government, various business sectors, and the society.

The European Parliament presented in 2015 an Action Plan to support the transition of the European Union to a Circular Economy "Closing the Loop". (European Environment Agency, 2016).¹⁴ The transition to a more circular economy, in which the value of products, materials and resources are kept in the economy for as long as possible, and in which waste generation is minimized, is an essential contribution to the European Union efforts to achieve a sustainable, low-carbon, resource-efficient and competitive economy.

The objective of this Action Plan is to guarantee the appropriate regulatory framework is established for the development of the Circular Economy and to give clear signals to economic operators and society in general.

Along with this, the legislative waste recommendations also include long-term goals to decrease landfilling and promote reuse and recycling of major waste streams like municipal trash and packaging waste.

It also includes objectives regarding employment, innovation, education, social integration and climate, energy, and efficient use of resources. The target should lead the member states to achieve ever better levels of practice and encourage the necessary investment in waste management.

At an international level, 17 Sustainable Development Goals (SDGs) are established since 2015, adopted by the United Nations, as a fundamental part of the 2030 Agenda for Sustainable Development. (United Nations, 2015).¹⁵

The most directly linked to the subject of Circular Economy are the following ones:

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

SDG 6: Guarantee the availability of water and its sustainable management and sanitation for all.

SDG 7: Guarantee access to affordable, safe, sustainable, and modern energy for all.

SDG 8: Promote sustainable, inclusive, and sustainable economic development, full and productive employment, and decent work for all.

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and encourage innovation.

SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable.

SDG 12: Guarantee modes of consumption and sustainable production.

SDG 13: Take urgent action to combat climate change and its effects.

SD 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

SDG 15: Protect, restore, and promote the sustainable use of terrestrial ecosystems, manage forests sustainably, fight desertification, halt and reverse land degradation and halt the loss of biological diversity.

SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

In general, all the SDGs will be positively impacted by the transition to the Circular Economy Model, either directly or indirectly. Therefore, the potential that this system offers to achieve the goals proposed by the SDGs is unquestionable.

Finally, it is worth mentioning that, in the 2015 Paris Agreement, Climate Conference, where 195 countries signed the first binding global climate agreement, a call was made all the nations in favor of a Circular Economy. (ECOSOC, 2015).¹⁶

From the analysis at the global level, similar economic concepts have been identified that are, directly or indirectly, related to the Circular Economy. In some cases, they are complementary models pursuing the same objectives and it can be observed clear interactions of all these concepts with the circular model.

The definitions and differences are explained in the following table:

| | Definition | Differences or Similarities |
|------------------------------|---|---|
| Green Economy | The Green Economy is a model that leads to the improvement of human well-being and social equality, while significantly reducing environmental risks and ecological scarcity. (United Nations Environment Program, 2009). ¹⁷ | The main difference is the Green Economy is focused on minimizing the use of fossil fuels and reducing their impact on emissions. While Circular Economy concerns on waste reduction and waste management. |
| Bioeconomy | The focus of the Bioeconomy is the production, use and conservation of biological resources, including knowledge, science, technology, and innovation. (United Nations Environment Program, 2009). ¹⁷ | Both concepts are referred to the same principle, setting of economic activities that consist of the efficient and sustainable use of resources of biological origin, through processes that are respectful of the environment and the development of rural environments. |
| Blue Economy | The Blue Economy is sustainable use of ocean resources for economic growth, improved livelihoods, and jobs, while preserving the health of marine and coastal ecosystems. (World Bank Group, 2016). ¹⁸ | The Blue Economy is mostly concerned on the ocean and the seas. |
| Social Economy | The social economy efforts to cover people's needs, guaranteeing access to decent work, and working on activities that involve necessary services for the development of a fairer and healthier society. (European Parliamentary Research Service, 2020). ¹⁹ | Many of the business models of these companies are based on Circular Economy principles, such as promoting reuse, repair and recovery of waste, remanufacturing, and recycling, as well as the sale and rental of second-hand objects. |
| Collaborative Economy | The collaborative economy, also known as shared or participatory consumption, is based on shared access to different goods or services, so that the cost of accessing them is distributed among a broader user base. (European Commission, 2009). ²⁰ | An open market for the temporary use of commodities or services, is created by this model within collaborative platforms, a common strategy to the Circular Economy. |

CHAPTER III

3.1 Barriers of the Circular Economy

According to the Study from Deloitte and Utrecht University, the main barriers are about resource scarcity, environmental impact, and cultural problems due to the lacking consumer interest and awareness, as well as a hesitant company culture. There are also technological and financial barriers, along with the supply chain, logistics and administrative responsibilities. (Deloitte & Utrecht University, 2017).²¹

The transition to Circular Economy is high complex in many terms, such as materials, energy, product design, business models, manufacturing, service and distribution processes and data management. There are many issues within the companies for closing material loops, making requirements and expectations of suppliers and customers, and developing the whole value chain.

As it can be observed, barriers can be presented mainly in 4 different sectors:

- Economic: High capital needed, long payback period, technology not available on the scale needed and not profitability at the business level.
- Market: Lack of information, externalities not reflected in the price or insufficient public infrastructure, and market competition,
- Regulatory: Inadequately defined legal framework, unintended consequences of existing regulations, and poorly defined objectives.
- Social and Cultural: Lack of skills and abilities and the current consumption habits and patterns.

There are also barriers such as the lack of technical knowledge, the challenge of adapting sustainable behaviors and carrying it out in practice, the absence of the contribution of external stakeholders. (Deloitte & Utrecht University, 2017).²¹ These barriers can harm the business model, so it will be more disadvantageous for the entrepreneurships which requires a lot of financial support.

Integration between sustainability issues and business development is also considered a critical issue, there are environmental obstacles such as the lack of effective measurements and practices and awareness of sustainability. (Technische Universität München, 2016).²² Due to the company's sustainability department seems to dominate the discussion of this issues, instead of spreading the knowledge to all the departments inside of a company.

It does not allow the continuity of a business, whether they arise when an entrepreneur starts the business or during its development. These barriers are the cause that certain risks arise and affect the objectives of the enterprise.

There is an interesting observation in the Circular Economy framework, which points to a lack of successful models that can be a model for new entrepreneurs seeking to belong to this field. (Technische Universität München, 2016).²²

Currently, there are examples of environmental sustainability strategies by large companies that may have the capacity to pay for any sustainable program; however, new entrepreneurs who want to be part of this field find it difficult to see examples that are closer to them and apply to their first years in the sector.

Sustainable entrepreneurs can have great green ideas that could involve resources that are sometimes expensive and difficult to obtain in a context that is not yet used to it. For instance, the enterprises may present complications when offering a quality product with reusable materials and cannot achieve efficient processes throughout their production chain.

Besides there are barriers from the government and its legislation, especially in relation to the lack of support for green enterprises, it is complicated to become noticeable with a tight budget for implementation. (Stockholm Environment Institute, 2021).²³ The Sustainable Entrepreneur must know all the implications of this in order to manage this type of enterprise ecosystem.

The lack of vision from the government regarding the environmental issue can partially harm the vision and objectives of a Sustainable Entrepreneurship to reach its target market by subsidizing the related costs.

It is also fundamental to highlight the internal barrier referring to the lack of strategy from the organization in offering an adequate price that can cover its costs. (Stockholm Environment Institute, 2021).²³ It is well knowing that consumers are still adapting to the eco-friendly style, so they will prefer low prices that an unfriendly product with the same functionality it can provide.

Finally, the administrative barriers are worth to mention, which are related to the leadership from the owner of an enterprise. (Stockholm Environment Institute, 2021).²³ It depends if the owner considers or not, to focus on other matters related to commercial strategies of the product. Ideally, the owner would adopt the circular economy as a fundamental element of their organization and constantly seek to internalize it.

Through this research, it has been possible to better understand the barriers faced by entrepreneurs in the environmental field, which focus on raising awareness in society in general so that they can support this type of enterprises, either as a consumer or as a part of another interest group, for example, suppliers or stakeholders.

Although it is important to know the risks that can affect a Sustainable Entrepreneurship, it is also extremely significant to identify the guidelines that will allow proper risk management so that they can be handled properly in order to be able to prevent or take action.

3.4 Benefits of the Circular Economy

The benefits of the Circular Economy Model can be evidenced in different areas, such as environmental, social, and economic, improving the quality of life of people, the world, and the competitiveness of the economy as a whole.

Since 2016, circular activities, such as repair, reuse, or recycling, have generated an added value of almost 147 billion euros in the European Union, representing private investments of around 17.5 billion euros. (European Commission, 2019).²⁴ The circular model opens new economic opportunities, given the emergence of new business models and the development of new markets.

Promoting this circular model can contribute to a more stable economy through a production model with less waste and more material and energy self-sufficiency. New business opportunities are opened, expansion to new markets and creation of employment.

Circular companies can save on production and consumption costs and be more resilient, thanks to their lower exposure to the volatility of raw material prices and savings in energy consumption. (European Commission, 2019).²⁴

At the same time, it allows access to more innovative products, more added value, and more competitive prices as it reduces the challenge of the price of raw materials. By replacing one-way products with circular products and generating reverse logistics networks as a stimulus for new strategies and innovation.

The Circular Economy model provides real and feasible benefits to face the main environmental challenges of 21st century society. (University of Bologna, 2017).²⁵ It allows reducing the pressure on the environment and natural resources, improving the quality of air, soil, and water, contributing to combat climate change.

The main benefits attend to the reduction of inputs and less use of natural resources, since the exploitation of resources is minimized and raw materials are optimized, providing more value with fewer materials. Having a higher proportion of recycled materials can replace raw materials, and in the case of extraction is done by a sustainable manner.

It also seeks to reduce the dependence on imports of natural resources and the use efficiently of them, as well as the minimization of the total consumption of water and energy, by having a remanufacture model, because not only the extraction causes an ecological impact, but the residues are also a factor of environmental degradation.

Likewise, the reduction of emissions throughout the entire material cycle is considered as a benefit, by a sustainable production. (University of Bologna, 2017).²⁵ So there is less pollution through clean material cycles, reducing of material losses, minimizing the accumulation of waste, and extending the useful life of the products.

It also contributes to an improvement in health and quality of life thanks to the mitigation of environmental impacts and climate change, while generating employment and economic savings for citizens.

Since 2016, sectors related to the Circular Economy have employed more than 4 million workers, an increase of 6% compared to past years. (MAVA Foundation, 2015).²⁶ This model can reduce unemployment, increasing well-being at all levels and at the same time, strengthening social cohesion and integration.

Companies can improve their reputation and positioning in an increasingly aware society, creating social and environmental value. Focusing on the Circular Economy can also position the territory as a benchmark for research, innovation, and a knowledge center.

Thanks to innovation in the circular model, citizens can access services and products at more competitive prices. It provides easier-to-repair and durable products, with return, recovery and recycling incentives, potentially saving consumers money.

Therefore, the Circular Economy could reduce the annual turnover of industries and at the same time reduce the environmental impact. (Adner, 2016).²⁷ Talking about the Sustainable Entrepreneurship Sector, the circular model promotes the economic growth due to the efficient use of resources and raw materials, generating substantial cost savings.

As a result, companies seek alliances by cooperation, because the waste outputs that may be generated can be part of the input for another company and in this way, it will be beneficial for both actors, this model would lead to new possibilities within the industries.

Hence the improvement of business competitiveness, due to the greater advantage over competitors, since environmental awareness is currently a value that is being appreciated by consumers.

CHAPTER IV

4.1 Circular Economy Strategies for the Sustainable Entrepreneurship

The Sustainable Entrepreneurship seeks to combine business practice with sustainable development, generating value for society by reducing the consumption of resources, producing products of greater value than the original, promoting the capacity of the planet to recover and putting profits in the generation of ecosystem services. (MITECO, 2021).²⁸

These enterprises are fundamental agents in global sustainability. It responds to act according to the Sustainable Development Goals to 2030, previously mentioned. There is an increasing number of enterprises that seek solutions to environmental and climate problems, through the

innovation of their processes, services, and products, many of them guide their processes towards Circular Economy.

The main goal of a Sustainable Entrepreneurship arises from a two-part process: environmental objectives and economic objectives. (MITECO, 2021).²⁸ It represents the process of applying business principles to the creation of companies that solve or contribute to solving local, regional, or global environmental problems that operate in an eco-sustainable way.

As every territory is different, the Circular Economy strategies and initiatives may be different in each region, depending on local needs and resources. Likewise, there are many strategies and good practices that can serve as a reference, and it could help to define a guide plan at a national or international level.

This section presents the key approaches and main strategies for a proper management of the Circular Economy Model, and it is accompanied by some examples of their implementation. All these elements written below contribute to the different opportunities, and business proposals for a Sustainable Entrepreneurship:

With a view to reducing waste output, this circular model emphasizes the eco-design strategy. It consists of incorporating environmental criteria into the design process in a complementary way to the rest of the criteria usually considered. (Luttrop & Lagerstedt, 2016).²⁹

Some common eco-design strategies at the product level are dematerialization, use of renewable materials, efficiency in use, modularity, durability, and design.

Industrial symbiosis is another business strategy that encourages collaboration between companies. (Delft University of Technology, 2018).³⁰ In order to see it through new business opportunities by exploring innovative ways to put them into practice, such as giving value to surplus resources and finding innovative solutions in the provision of resources.

It is about seeing the set of industries as if it were a natural ecosystem. In a natural ecosystem there is no waste and a greater diversity allows for more wealth and development, working to minimize the use of resources and the energy transition towards renewable energies.

The local area is the ideal environment to promote industrial symbiosis projects, since the municipal or even regional scale allows the implementation of beneficial relationships between different agents that result in a better use of resources, cost savings or generation of new income.

The application of industrial symbiosis makes it possible to go beyond the industrial fabric and integrate other local elements, such as forests, or livestock farms, waste treatment centers and other municipal facilities, commerce, and citizens.

The closed loop is an additional strategy applied nowadays. It is based on the contribution of supplies that are completely renewable, recyclable, or biodegradable and that, therefore, help to maintain the circularity of consumption processes and systems. (Delft University of

Technology, 2018).³⁰ Its value proposition lies in the substitution of fossil fuels or critical or scarce materials.

It is based on the supply of fully renewable, recyclable, or biodegradable resources for circular production and consumption systems. Companies can use this model to replace dwindling linear resources, while reducing waste and eliminating inefficiencies. It is especially suitable for companies that use scarce raw materials or have a large environmental footprint.

Essentially, it is a production procedure where the waste is gathered and recycled to create new goods. For an efficient closed-loop system, the consumers, recyclers, and manufacturers have to work together to recover materials from the waste stream and use them to make new products.

For example, this process can be as simple as using recycled aluminum from cans to make new ones, or more complicated like reclaimed polyester fabric from plastic bottles to make clothing and other products.

Then, there is the strategy of upcycling, also known as supra recycling or upgrading. It is the process of transforming an obsolete object or destined to be a waste, to another product that can be used and that has an equal or greater value. (McKinsey Center for Business and Environment).³¹

It is different from recycling, since during its process the materials can lose quality compared to their original material use. On the contrary, upcycling does not break down the material, but transforms or relocates it using the same materials to make the new product.

Actually, the upcycling comes to replace the concept of recycling, due to the waste from a stage or process is an input element or raw material for another process, which reduces its loss of value.

It combines two of the 3Rs: reduce the consumption of new products and raw materials and reuse them. For example, using scrap steel left over from automobile manufacturing to make steel beams for use in building construction.

The strategy of servitization implies the transformation of business models towards value propositions based on the offer of services, either through temporary access to a product or directly to results, instead of the sale of products. (McKinsey Center for Business and Environment).³¹

This model offers an alternative to the traditional model of buy and own objects. In this case, one or more customers use the products under a rental or an agreement, in which the user pay per use, it means to receive better service while fewer resources are consumed.

With servitization it is possible to align the interests of the business, the consumer, and the planet since it decreases the generation of value from the consumption of resources. So, the

companies retain the products and design them to optimize their durability and efficiency and the users just pay for access to products or results.

For example, carsharing companies with an electric fleet, public bicycle rental in urban areas, rental and exchange of products and services between companies.

It is an opportunity to combat the social and environmental dumping generated by uncontrolled globalization, as it generates benefits for citizens by being able to stop worrying about the maintenance and repair of the products, which are assumed by the companies that offer the service.

The platform sharing business model is another strategy that encourages collaboration between product users, whether individuals or organizations. (European Investment Bank).³² In this way it is possible to compensate for excess capacity or lack of use, increasing productivity and the value provided to users.

This model, which helps maximize usage levels, could be beneficial for companies whose products and assets have a low level of usage or ownership. For example, shared mobility platforms.

A territorial hierarchy should be also applied as a strategy, by developing cycles as short as possible, introducing sustainable policies for municipalities and regions, before considering the national and international level. (European Investment Bank).³²

A good development of the circular model implies applying the principle of the short circuit in the first place, that is, at a local level within the same city, with the aim of optimizing cycles.

Eco-innovation is the further strategy about changing consumption and production patterns, and market acceptance of technologies, products and services that reduce the impact on the environment. (European Investment Bank).³²

Business and innovation come together to create sustainable solutions that make better use of resources, reduce the negative side effects of our economy on the environment, and create economic benefits and competitive advantage.

It implies a coordinated set of modifications or new solutions to products or services, processes, market approach and organizational structure that leads to better performance and competitiveness of the company.

Reduce Obsolescence to prolong the useful life of the product is a great strategy for this model, through repairing, upgrading, remanufacturing or remarketing products, it is possible to maintain or even increase value that would otherwise be lost through the disposal of materials. (Technical University of Berlin, 2020).³³ It allows companies to extend the life cycle of their products and assets.

By prolonging the use of the products, additional income is also generated. A company can use this model so that its products continue to have economic value for as long as possible. Also, products are updated in a more precise way. For example, by replacing an outdated component instead of the entire product.

Product resiliency is about increasing functionality and usability. This also implies acting against planned obsolescence related to the unbridled economy of consumption. Recovering the products by the manufacturers after their use to give them a new life, recovering their original performance and with a guaranteed equivalent to that of a newly manufactured product.

The recovery of the remaining value at the end of a product's life cycle to use it in the next cycle favors return chains and makes it possible to transform waste into value. This strategy directly combats technical and even aesthetic obsolescence, since it allows the product to be updated, extending its useful life.

To design waste prevention is a suitable strategy for maintenance. (Environment Agency Austria, 2020).³³ It is important to consider the design of products and services in such a way that the creation of waste is radically reduced, through a better integration of the materials.

The biological nutrients describe the materials designed to be directly reincorporated safely into the biosphere. (Environment Agency Austria, 2020).³⁴ For example, most packaging can be designed as a bio-nutrient or, in other words, biodegradable or renewable, designed to be returned to the biological cycle as nutrients.

Otherwise, the technical nutrients refer to materials designed without the possibility of being reintegrated into the biosphere, but suitable for reincorporation into the circular production process through reuse or recycling. (Environment Agency Austria, 2020).³⁴ For example, electronic products, which can be returned to the technological cycle by dismantling parts and reusing them in other products.

Part of the waste prevention involves the maintenance strategy, which contributes to extending the useful life of goods and equipment, so that this greater durability translates into less consumption of new products. In the case of maintenance, if it is done preventively, costs can be saved, avoiding waste generation, and optimizing the equipment operation.

Preventive maintenance can be defined in three different types. (Environment Agency Austria, 2020).³⁴ They are explained in the following:

- Scheduled maintenance: The revisions are made based on time or hours of operation.
- Predictive maintenance: It tries to determine the moment when repairs should be made by means of a follow-up that determines the maximum period of use before being repaired.
- Opportunity maintenance: It tries to take advantage of periods of non-use and avoiding stopping the equipment or facilities that are in use.

Additionally, the estimation of the metabolism sector is another strategy within the circular model. Having information on the consumption of resources and the generation of waste and emissions of the pre-selected economic sectors is a basic step in order to limit the scope of the sectors. (Lacy & Rutqvist, 2015).³⁵

Once the priority sectors have been selected, the objective now is to understand how they work at the level of resource consumption and waste generation. It allows to identify where are more resources consumed and where are more inefficiencies when it comes to generating greater volumes of waste or emissions.

After the analysis of the metabolism of the sectors, it encourages the ideal phase to identify potential strategies. (Lacy & Rutqvist, 2015).³⁵ For example, in the analysis of metabolism, a large generation of food waste can be observed in the distribution sector, which opens the doors to proposing circular economy projects against food waste.

It can be observed that the circular model is a system of activities aligned throughout the entire life cycle of the product, which creates value for all stakeholders, in the provision, distribution and consumption. (Lieder & Rashid, 2016).³⁶ Involvement of all stakeholders in the life cycle is part of this strategy.

The objective is a triple result and correlated with the 3 pillars of sustainability: People, Planet and Profit. (Lieder & Rashid, 2016).³⁶ The social through the well-being of people, the environmental through the ecological quality of the planet, and the economy through economic prosperity.

Finally, the Environmental Management System (EMAS) or ISO 14001 are considered facilitators of the implementation of the Circular Economy. (International Organization for Standardization, 2015).³⁷

Based on them, good environmental practices and waste minimization plans have been developed, and they have contributed to reaching multiple environmental agreements in many sectors.

The fundamental characteristics of this programs are detailed below:

- Reduce the amount of materials needed to provide a particular service or manufacture a product and the use of energy and materials in the production phases and the use of difficult materials to recycle.
- Increase the useful life of products and services and value the efficiency of resources and implement the principle of continuous improvement.
- Create markets for secondary raw materials and design products that are easy to maintain, repair, upgrade or recycle and incentive the reduction of waste and separate between clients and consumers.

- Develop the necessary maintenance services and encourage selective collection systems. Promote the rental, loan, or exchange of services as an alternative to buying products.

It is advisable to use the guidance of ISO 14001, an internationally recognized standard for environmental management, as it offers comprehensive advice and guidance to help companies implement long-term sustainable operations and to examine internal business operations, as well as surrounding environmental conditions that a business may need to adapt to.

There are many tools currently developed and available to companies in order to internalize the environmental variable in business management and to achieve the goals at international, national, and sectoral commitments.

All these Circular Economy strategies are key elements to perform new business models, a new way of generating value unrelated to the consumption of natural resources. The application of these strategies allows, not only to reduce costs, but also to gain competitiveness through consolidation or access to new markets, the satisfaction of customer and consumer demands and positioning as a responsible and sustainable brand.

The previously mentioned Circular Economy strategies can impact different levels or scales of the production and consumption system, from changes at a micro or a macro scale, such as new business models based on collaborative consumption or access to results instead of selling products.

4.2 Transition to the Circular Economy and the Role of Public Policies

The full implementation of a circular economy requires the participation of all kinds of economic and social agents that establish new relationships of trust aimed at generating shared value by making better use of resources, in a stable and favorable territorial and economic framework.

The Circular Economy aims to establish a new paradigm in the way of production and consumption, to find a more sustainable and responsible economic model with the environment. (Ghisellini, Cialani, & Ulgiati, 2016).³⁸

As it is mentioned before, this model includes the entire value chain, including design, supply of raw materials and energy, manufacturing, distribution, consumption, waste management, etc. It is necessary all parts involved into the transition towards a new way of doing business that improves the productivity of resources, increases differentiation, reduces costs and risks, generates new sources of income, and enhances the value proposition for customers.

It is important that organizations, regardless of market, geographic area, or industry, begin to lay the groundwork for change. This means leaving behind the linear economy model, replacing it with a new one of a society involved in optimizing the flows of material resources, including water, energy, and waste.

Likewise, the role of the public administration, companies and society is essential to facilitate and promote the change towards a more circular economy, it requires a change of both business, territorial, and individual vision, rethinking the way of producing and consuming. It should be accompanied by a legal framework that promotes and accompanies this transformation. This is applicable to different scales and agents: private sector, public sector, and citizens.

Local entities can play a role in facilitating the Circular Economy, energizing, and promoting the concept among the economic sector, including companies, industry, commerce, and supporting a sense of trust, collaboration, cooperation, and transparency that promotes the appropriate conditions for the promotion of this model. (Ambiental Forum Foundation, 2020).³⁹

This position allows to disseminate and raise awareness and encourage more sustainable consumption. Local entities have the ability to educate, inform and raise awareness, integrating the concept and including this knowledge in the educational system, in public communications and information campaigns.

They are also considered as agents that promote circular consumption models, since they play an essential role in launching and accelerating the transition in cities and countries, so they are in a close position to the citizen, who is, ultimately, the consumer of products and services.

There are crucial initiatives and proposals for the local entities in the management of Circular Economy urgent to attend. (GARAPEN, 2020).⁴⁰ They are explained in the following:

- Financial support for business, grants, capital provision or financial guarantees, and technical support, advice, training, and demonstration of good practices.
- Strengthen support for the principles and criteria of the Circular Economy by designing tax tools for benefit Sustainable Entrepreneurships. Support the establishment of educational and training programs to enable the training of qualified professionals and develop a new approach in production systems.
- Promote research in relation to the correct use of resources, about upcycling and downcycling, in terms of reuse and regenerate the environmental impact. Platform for the exchange of resources between local companies and promotion of repair and remanufacture, and a selective collection through a deposit, return and return system.
- Design communication campaigns in order to spread the basic principles of the Circular Economy among consumers focusing on the necessity for a new relationship between consumption and production. These campaigns must transfer to the consumer their role as the main actor in terms of business decision-making, through the orientation of consumption.
- Identify the biggest sector to provide greater support, to detect the main economic segment in a territory. These are the ones with the highest consumption of materials, energy, and those with the most environmental needs. Implement a producer responsibility system, establishing specific norms for the most polluting sector.

- Program to support the eco-design of products and services for different industries.
Campaign to dignify artisan and manual work linked to the circular economy.

Finally, it is worth to mention that the industries have also a big influence in the public policies, that is why the Sustainable Entrepreneurship Sector, have to realize that environmental performance is included in business performance and that it works effectively at any scale, preserving and increasing natural capital, controlling finite stocks, and balancing flows of renewable resources.

If the objective of the Sustainable Entrepreneurship is to implement the principles of the Circular Economy in business management, there are different tools to apply, but the execution and development of these actions supposes, automatically, the participation of all the workers and their representatives. (Universidad Complutense de Madrid, 2020).⁴¹

There is an Action Plan for the Sustainable Entrepreneurship, which consists of a series of actions to must consider in the matter of Circular Economy. (Calduch, 2020).⁴² It is detailed down below:

1. Acquisition of the commitment. Capture and visualize the commitment from the highest level of the organization, but also the complicity of all parts and departments of the company. The representatives of the workers may propose to the company the development of training workshops on Circular Economy for employees, where the implications of the new production model for different tasks should be analyzed.
2. Preparation of a proper Circular Economy Action Plan, based on innovation or development of new business models, starting with eco-design of products and services. Identify the risks associated with a Linear Economy and the strengths and opportunities of the Circular Economy for the current sector and organization.
3. Take action on the supply chain, in order to implement a management fully circular, not only the own processes have to be circular, but also those of the suppliers. Procedures must be a priority making sure the suppliers contribute to circularity, as well as ensuring that the purchasing processes of companies not only respond to economic criteria, but to social and environmental criteria.
4. Plan Implementation from all the members. The organization not only needs the support and involvement of all departments, production, marketing, innovation, corporate social responsibility, finance and purchasing, but it also needs to encourage worker participation and guarantee social dialogue at all levels, as well as delegate a person in charge to monitor it.
5. Measurement of progress and monitoring of actions related to the transition towards a Circular Economy Model. Measurement and monitoring are key to ensuring the effectiveness of the plan, but also to show to the rest of society the company's commitment improving its image and reputation.
6. Communication and training. The representatives must work so the company makes the company's circularity documentation available to them and guarantees the training of workers in the matter of Circular Economy. Likewise, establishing channels of

communication and effective participation of workers inside the company to guarantee success.

7. Develop a program to raise awareness and specific information on the efficient use of resources and the preparation of manuals for good environmental practices in terms of water, energy, and material consumption, and ensure that it is disseminated among all workers. It is not necessary to create own manuals, it can be use those already generated by governments or organizations. In this sense, it is recommended to adapt them to the reality of the workplace.
8. The purchasing area is the one who defines the environmental behavior of the company, it is recommended to request the development of circularity criteria in the company's purchases, including environmental evaluation and protocols for suppliers. For example, promoting the minimum possible packaging or the containers used could be made from recycled or recyclable materials.
9. Foster awareness campaigns on sustainable professional mobility, for this it is necessary to carry out an analysis to identify the modes of displacement of workers to their jobs and in the development of their business tasks. Some of the basic measures in this sense would be aimed at making a change of fleets for more efficient and less polluting vehicles, the promotion of public transport among workers, including the transport pass as a social benefit, the development of promotion plans for shared vehicles, or the acquisition of electric bicycles provided by the company to workers.

CHAPTER V

5.1 Circular Economy applied to Textile Industry

The Textile Industry is the second most polluting on the planet, behind oil. This sector is responsible for the emission of 850 million tons of CO₂, the generation of thousands of tons of waste and the use of some 93 billion cubic meters of water per year. For example, to produce a pair of jeans, around 3,000 liters of water are required and about 1,200 liters for a cotton shirt. (European Environment Agency, 2020).⁴³

The report “A New Textiles Economy: Redesigning Fashion's Future”, points out that this industry is, in addition to polluting, very wasteful. It estimates that the underuse of clothing and the lack of recycling in the sector lead to a loss of more than 500,000 million dollars a year and it shows that between 80-90% of the clothes we throw away end up in landfills. (Ellen MacArthur Foundation, 2017).⁴⁴

Since clothing has increasingly been viewed as disposable, and the industry has become highly globalized, with garments often designed in one country, manufactured in another, and sold around the world at an increasing rate.

Fashion extracts natural resources at an alarming rate and consequently has a devastating effect on climate change and biodiversity loss. The fashion industry has followed its linear mode of production and consumption, it generates a level of waste that is complicated to manage.

The Fast Fashion phenomenon leads to a doubling of production during the same period and increasing the demand of the market. (Ellen MacArthur Foundation, 2017).⁴⁴ This decision-making model has numerous negative environmental and social impacts, and a large amount of money lost each year due to underutilized clothing and lack of recycling.

The textile industry relies primarily on non-renewable resources including oil to produce synthetic fibers, fertilizers to grow cotton and chemicals to produce, dye and finish fibers and textiles, it also uses millions of cubic meters of water annually contributing to water scarcity problems in some regions. (McKinsey Sustainability, 2016).⁴⁵

The production model of the textile industry currently works under the traditional production system. It produces clothes, consumers buy them, use them, and finally throw them away without those clothes re-entering the production circuit.

Greenhouse gas emissions from textiles during production, industrial water pollution attributable to textile dyeing and treatment, tons of plastic microfibers released during washing of plastic-based textiles such as polyester, nylon, or acrylic finishes in the ocean. (McKinsey Sustainability, 2016).⁴⁵

Additionally, a very common practice in this sector industry is the Greenwashing, it consists of different practices when a company gives fake advertising and false impressions in order to look like environmentally responsible or friendly. (Environmental Sciences Europe, 2020).⁴⁶

Greenwashing misleads the information and the publicity convincing the target or the consumer by pretending sustainable practices. For instance, the usual practices to emphasize these aspects are distorted labels, confusing tradeoffs, eco-friendly image on social networks, among others.

These practices can mislead consumers into buying their products that might not be eco-friendly. It is recommended to verify information about the company's environmental and social practices or its commitment to fair labor practices and transparency in terms of where their products are originated, and in which conditions are manufactured.

The principles of the Circular Economy are redesigning the fashion industry and reducing the great impact it has on the environment. (Environmental Sciences Europe, 2020).⁴⁶ Not only are the big firms are beginning to be aware that the raw material can be reused, but the buying and selling of second-hand garments is proliferating.

There are some contributions outlined below:

- The eco-conception: To work on an ecological conception that considers the environmental impacts derived from offering a service or making a product.

- Industrial and territorial ecology: To establish a mode of industrial organization in the same territory characterized by optimized management of stocks and flows of materials, energy, and services.
- The economy of functionality: A new consumption model based on pay per use.
- The second use of a product: To reintroduce into the economic circuit those products that no longer correspond to the initial needs of consumers.
- Reuse and repair of materials: To reuse certain residues or certain parts of them, which can still work to produce new products or to find a second life for damaged products.

It is important to mention the recent “Circular Economy Action Agenda for Textiles” that includes both important opportunities and challenges that we must consider if we want to adopt a Circular Economy Model within the fashion industry. (PACE, 2020).⁴⁷ The following points are some actions identified in the agenda for the Sustainable Entrepreneurship working on the circular transition:

1. Increase recyclable designs with long term durability by high quality materials in order to last as long as possible, to avoid disposable items, as well as a focus on homogeneous fibers rather than blended fabrics.
2. Encourage the market to wear less clothes and for longer, persuade the customer to buy less, buy second-hand clothes, keep clothes in use for longer, and support sustainable fashion.
3. Ensure environmental and socioeconomic benefits in places where trade in used textiles occurs. Increase efficiency and quality in textile classification.
4. Promote collection campaigns of used textile and facilitate recycling projects. Guide and support new business models, such as subscription, rental, and resale.
5. Make the recycled fiber market competitive, to adopt them on a larger scale and stimulate the development of recycled material supply chains. Produce virgin natural fibers only in an environmentally responsible way.
6. Integrate and promote decent work and higher quality jobs in all the stages of the process of the value chain. Align industry efforts and coordinate innovation to create safe materials cycles.
7. Encourage more deeply researches on the socioeconomic effects of the textile system, including model, clothing, and fabric.

A new textile economy based on Circular Economy principles would lead to better results, because it implies an important sector in the world economy. This would require collaborative efforts across the value chain, involving public and private sector actors to truly transform the way clothing is being designed, produced, sold, worn, collected, and reprocessed.

5.2 Circular Economy applied to Food Industry

Within the Food Industry, 1.3 billion tons of food are lost or wasted in the world every year, which represents 1/3 of world production. The level of waste generation related to food is one of the aspects that should stir consciences by itself. In the EU alone, 88 million tons of food is wasted every year and 8 million in Spain. (FAO, 2019).⁴⁸

The food waste, in addition to the ethical and nutritional problem that it implies, also has environmental repercussions, because when a food is discarded, the resources used for its production are also discarded. It is also notable, due to the serious environmental problem it represents, the massive amount of packaging waste, including plastic packaging.

The cause of this impact could vary according to the type of product, production, transport, storage, packaging, and due to bad habits and lack of consumer awareness, but it still concerns the culture of waste in the role of the food industry.

In addition, the dumping of biodegradable waste contributes to climate change. (FAO, 2019).⁴⁸ For example, the plastic containers in the food industry are not designed to have more than one use, and once discarded, they lose their value and become an environmental problem of unexplored dimensions.

The restructuring of the Food Industry in accordance with the Circular Economy can help alleviate the problem of food waste, increase efficiency in the use of resources and promote the growth of local markets, increasing the value chain of products. (Pardos, 2020).⁴⁹

It should be essential that these objectives go through the creation of a solid social conscience around this circular model, with the support of the corresponding institutional measures. It has multiple benefits by implementing in the Food Industry, such as the following:

- Increased brand reputation by recognizing customer values.
- Improvements in the relationship with stakeholders.
- Reduced material and energy use to reduce costs.
- Potential development of new innovative resources.
- Mitigate risks associated with fluctuating resource costs.

The Agri-food Industry is immersed in a continuous process of renewal, as it has great influence on public health. (Pardos, M., 2020).⁴⁹ It is essential to have professionals with specific knowledge capable of satisfying the demands of the market, society and according to the availability of raw materials.

It is important not only to increase information on the origin, composition and means of production of food, but also to help consumers to make better choices. Therefore, the Food Industry should be more reliable, and well prepared to provide food and resources for the generations to come fostering the culture of sustainability.

That is why the fundamental to pay special attention to ecolabels, to ensure that environmental communication is agile, truthful, and reliable, in order to avoid practices such as greenwashing. It allows the consumer to choose products based on their environmental performance, as a way of reducing environmental impacts through their consumption habits.

Committing to the circular model means being part of a broader movement that defines and cultivates a positive vision of the future and setting a benchmark for clean energy and climate action. (International Journal of Social Economics, 2017).⁵⁰ Given this scenario, the following points are some actions identified for the transition in the food industry:

- Optimize the use of auxiliary resources such as water or energy, establishing systems that allow part of these flows to be recovered, whether energy, or water can be reused for non-productive processes. Avoid introducing substances that end up contaminating soils and aquifers. Protect the maintenance of the structure and quality of the soil. Compost organic matter to obtain fertilizer for agricultural use.
- Design processes to reduce, as far as possible, waste in product manufacturing, implementing methodologies such as lean management, which favor the production of small batches and a high capacity for product customization based on customer preferences. Prevention of food losses and waste throughout the entire supply chain, creating systems for collecting and using food before it expires or is wasted.
- Implement management systems for a useful life of raw materials and finished products, related to storage, transport, temperature, etc. Participate in industrial synergies and symbioses through upcycling. Promote green purchasing to incorporate more sustainable raw materials and products.
- Promote the correct use of eco-labeling, packaging and certifications, the consumer has an elementary role when it comes to comparing and deciding on similar products, taking into account the environmental circumstances involved in each preparation. Residue-free food packaging, using scraps for new packaging.
- Adjust the capacity of the sales units to the real requirements of the customers, without ruling out return and return systems, or bulk marketing. Rationalize the consumption of resources in food production and product logistics by applying eco-design.

That describes how Sustainable Entrepreneurships in this industry can start the process to measure food loss and waste and begin to circularize their processes. The food industry is required to focus their entire value chain towards more sustainable management, in order to development strategies for the reuse of resources.

This model can be applied to any phase, from food processing to packaging, therefore, it could reduce waste, increasing the adding value to the business, and giving products a competitive price and market. It also can improve a company's reputation by showing for the customers the good and sustainable practices adopted.

CHAPTER VI

6.1 Conclusions and Recommendations

The objective of this study, as it is mentioned before, was to bring the subject of the Circular Economy closer to Sustainable Entrepreneurship focused on the analysis of the barriers,

benefits, and strategies, the step by step on how to make the correct transition from the linear economy to the circular one.

As a conclusion, the Linear Economy is a reflection of a time when resources, energy and credit were believed to be unlimited, were easy to obtain and there was no awareness of the serious environmental consequences. The Circular Economy is presented as an alternative to this current model of production and consumption, with the potential to solve environmental challenges, while opening up business opportunities and economic growth.

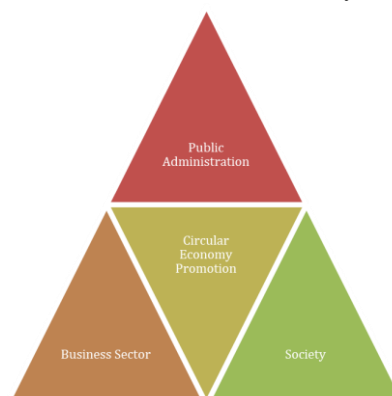
The transformation from the Linear Economy to a Circular Model needs to implement changes at the systemic level. It aims to redefine growth, focusing on positive benefits for the society, based on three key principles:

1. Protect and improve natural capital and renewable resources and managing finite reserves.
2. Optimize the use of resources, rotating products, components, and materials with maximum utility at all times, both in technical and biological cycles.
3. Promote the effectiveness of the system, revealing and eliminating negative externalities.

Therefore, the Circular Economy is outlined as a regenerative economic system that is based on business models focusing on reducing, alternatively reusing, recycling, and recovering materials in production, distribution, and consumption processes. The principal goal is to achieve success and equity in the economic, environmental, and social sector.

It requires a change of all of the agents involved, including public authorities, business, society, rethinking the consumer behavior, by the way of producing and consuming and new policies focus on new markets models and innovation. These sectors must work together to find new opportunities for waste products and materials, while consumers must continue to reduce, reuse, and recycle, while also demanding greater circularity in products and services.

Figure IV: Agents Involved in the Promotion of the Circular Economy.



Resource: Own Elaborated Chart.

At the same time, it must be accompanied by a legal framework that encourages this transformation. The role of the public administration is essential to facilitate and promote the

change towards this model, so it is a great opportunity to boost the local economy, based on a more collaborative way of working.

As this model focuses on maximizing the value of products and materials, particularly those that typically end up in our waterways and landfills, the importance of the regeneration practices means that products and services could contribute to systems that renew or replenish themselves throughout various lifecycles and uses. It affects the entire value chain, from designers, suppliers of raw materials, manufacturers, distributors to consumers and managers.

Consequently, the correct mechanisms must be established, and the necessary resources require to put into operation. At the same time, it is convenient to establish a system with economic, environmental, and social indicators for the achievable results.

Monitoring the results will give enough information to the Sustainable Entrepreneurships about the opportunity areas and, eventually, it will allow it to identify different options for scaling up projects, and to replicate them on a larger scale once their operation has been validated.

Thanks to this economic model, the resources and products stay longer in the value chain, so the generation of waste would be avoided. These measures will positively affect to various sectors of the economy transforming the production, distribution, and commercialization, generating new jobs, and developing new procedures more efficiently.

After this research, the main barriers have been identified for the Sustainable Entrepreneurship Sector, implying financial, structural, operational, attitudinal, and technological obstacles, it reveals even more severe difficulties as new perspectives need to be faced and integrated, in order to develop new processes and to remain in the market over time.

The Sustainable Entrepreneurship should internally promote further development of Circular Economy principles. The implementation of the management strategies proposed in the research should be an asset to implement this model. The following are some of them:

- Environmental training plan for all the workers.
- Codes of conduct specific to the industry in question.
- Impact analysis on the environment of the different processes.
- Techniques to improve the effectiveness of environmental impact.
- Control systems of the environmental management plan.
- Audits that verify the effectiveness of the implemented measures.
- Legal advice necessary to comply with current regulations.
- Strengthen relations through participation in competitive funds and different platforms.
- Use of indicators to provide more information on the social and environmental impact generated on the green market.

In addition, it is important to have a broad perspective of, both external and internal, actors that influence the role of Sustainable Entrepreneurships and to strengthen their relationships with them. The application of the Circular Economy principles generates benefits for these

enterprises such as the reduction of operational and logistical costs, due to the reuse of resources and alliances with other organizations.

It can be analyzed within this research, the main reasons that move an industry to become positively aware, are based on environmental measures, corporate policies, consumer pressure, technological development, national legislation and laws, local and international competition, new business opportunities or cost savings.

At a global level, the Circular Economy requires an unlearning and learning process in order to change basic mental models in the organizations, which clearly prescribe a committed management that involves environmental awareness in the final consumer and in the society. But it requires new strategies and innovations within all the sectors involved, from the government and businesses to the society. The integration of all its parts working together would be the greatest asset to adopt this model.

Conclusively, it will probably take a time to achieve true circularity. This is because all parts involved need to work together to create a system that keeps materials in the loop.

It is important to consider that growth and sustainability are not antagonistic. Sustainability must not be consolidated as a barrier but rather as an engine to maintain the value of production for as long as possible.

Finally, the Circular Economy approach is not only based on sustainability, but its cornerstone is based on sustaining economic growth, based on the conservation of resources. In other words, it incorporates environmental management as one more cost, aimed at sustaining the productive economy on a global scale.

The following is a Self-Assessment, by own elaboration, based on the main inquiries of this study, for the Sustainable Entrepreneur focused on the Circular Economy:

This questionnaire has the objective to get to know the risks and opportunities on the Circular Economy Strategic Management, it is a set of questions related to the topics mentioned in this research. It is designed to facilitate the planning and management process of the entrepreneurships.

Administrative Sector

- Do you think that the way you have structured your business facilitates the execution of the Circular Economy Model?
- What skills and competencies must have a "perfect leader" to lead a Sustainable Entrepreneurship?
- What is the level of priority that the Circular Economy Model has in your Sustainable Entrepreneurship?
- Is there a constant review of the Circular Economy Model processes for continuous improvement?

- What are the challenges you have had or have when implementing the Circular Economy Model?
- How do you think you contribute to sustainable development by applying the Circular Economy Model to your business?

Government Sector

- Do you think that current public policies are adequate to facilitate the development of environmental enterprises?
- Is there political or institutional support to promote the project?
- Do you think that there are some public policies that the government should implement to encourage the development and growth of environmental enterprises?
- Do you have any cooperation links with other Sustainable Entrepreneurships or collaborators interested in joining the project?
- Is there a history of collaboration between companies in the estate or territory evaluated?
- What are the SDGs that your Sustainable Entrepreneurship is focused on and how do you seek to contribute to them?

Economic Sector

- What do you think are the requirements to access financing for the development of an environmental enterprise?
- Do you consider that the Sustainable Entrepreneurship have high costs compared to traditional ventures?
- What are the strategies of your Sustainable Entrepreneurship to offer a product at a price that can generate profitability in the region?
- Do you know the subsidies that a Circular Economy Project can access?
- How is the amount of money offered by the grant considered in relation to the funding needs of the project?
- Are there collaborators with the capacity to support the project?

Technological Sector

- What do you consider are the technological barriers faced by a Sustainable Entrepreneurship in its production or distribution processes?
- Did you ever realize that you had to implement a technological improvement to achieve the activities of your Sustainable Entrepreneurship?
- Are there specialists with sufficient technical knowledge and experience to provide technical support to the project?

Cultural and Social Sector

- Do you think that consumers value the exercise of a Sustainable Entrepreneurship in the country?

- How do you think the Spanish market responds to the initiative of Sustainable Entrepreneurship?
- What do you think is missing in the country to be a greater number of Sustainable Entrepreneurships?
- How would you describe the profile of the customers of your organic products?
- Do you consider that you have different types of customers, with different characteristics (ages, lifestyle, reason for purchasing eco-friendly products, purchasing behavior)?
- How has been the process of capturing the attention of new organic clients?

Processes, Raw Materials and Waste

- Do you know which are the waste generated in greater quantities by the companies in your territory so can take it as a business model?
- Are there other sustainability projects (energy efficiency, selective waste collection, industrial training programs) in the territory?
- What environmental characteristics does the raw material have for the production process?
- Do you consider that it generates less impact on the environment during the production process?
- Do you know which are the raw materials demanded in greater quantities by the companies in your territory?

This self-assessment is to identify the potential of the Sustainable Entrepreneurship Project and to promote the Circular Economy, determining the level of preparation available to the promoter and the territory where it is implemented.

According to the information obtained, the Sustainable Entrepreneurship should be capable to discern the level of preparation of the project proposal, if is adequate or insufficient. Therefore, it can be concluded, if it is highly recommended to promote the Circular Economy Project, or it is not suggested to develop it until the main weak points are solved.

NOTE: This questionnaire is originally designed asses each of the areas questioned. The results are not conclusive, as it is just an internal analysis for the enterprise.

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