

Circular Economy and Sustainable Strategy for Textile Industry: A proposed Model of Sustainability

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Abstract

While we are transitioning to a circular economy, we need to go through a parallel change in order to maintain our competitive edge and continuously develop at a rapid pace. There is a growing number of firms that are discussing what is commonly referred to as the circular economy. This concept involves the establishment of supply chains that are capable of recovering or recycling the resources that are utilized in the production of the products. In recent times, there has been a growing amount of attention and criticism directed against the textile industry's widespread environmental impacts, which include the depletion of resources and the production of excess waste. Not only does the circular economy offer a practical solution to these problems, but it also serves to raise awareness about the significance of implementing environmentally responsible activities. When it comes to organizations and businesses, meeting the requirements for sustainability is a corporate advantage that can be used to increase revenues. Especially relevant to the textile industry is the concept of a circular economy, which aims to lessen the amount of waste produced while simultaneously boost the efficiency with which resources are utilized. By selling your company's spare fabrics, yarns, or offcuts to other firms, you can reduce the amount of clutter in your workplace and increase your income. The circular economy provides more than just a new way of conducting business; it is an opportunity for any organization that has long-term sustainability goals.

Keywords: Circular Economy, ESG, Environment protection, Global Business strategy, Sustainability, Textile business

Introduction

It is estimated that India's textile industry dates back more than five thousand years, making it one of the oldest in the world. In addition to dyed garments dating back to approximately 2500 B.C., there are accounts of cotton threads from India dating back to approximately 4000 B.C. Over the course of time, India's textile industry has developed, thereby establishing new benchmarks for the fashion industry and the manufacture of fabric all over the whole world. It has a long history of producing textiles of superior quality that are not only unique but also representative of the varied cultural environment that exists in India. Taking into account both forward and backward linkages, the textile and garment industry in India contributes around 2.3% to the country's gross domestic product in the year 2023-24. It is responsible for seven percent of India's total industrial production, twelve percent of India's total export revenues, and employs more than twenty-one percent of the country's total labor force. The country of India, which is the world's second-largest producer of silk, is the source of the vast majority of the handwoven fabric around the world. Wool, cotton, silk, and jute are the materials

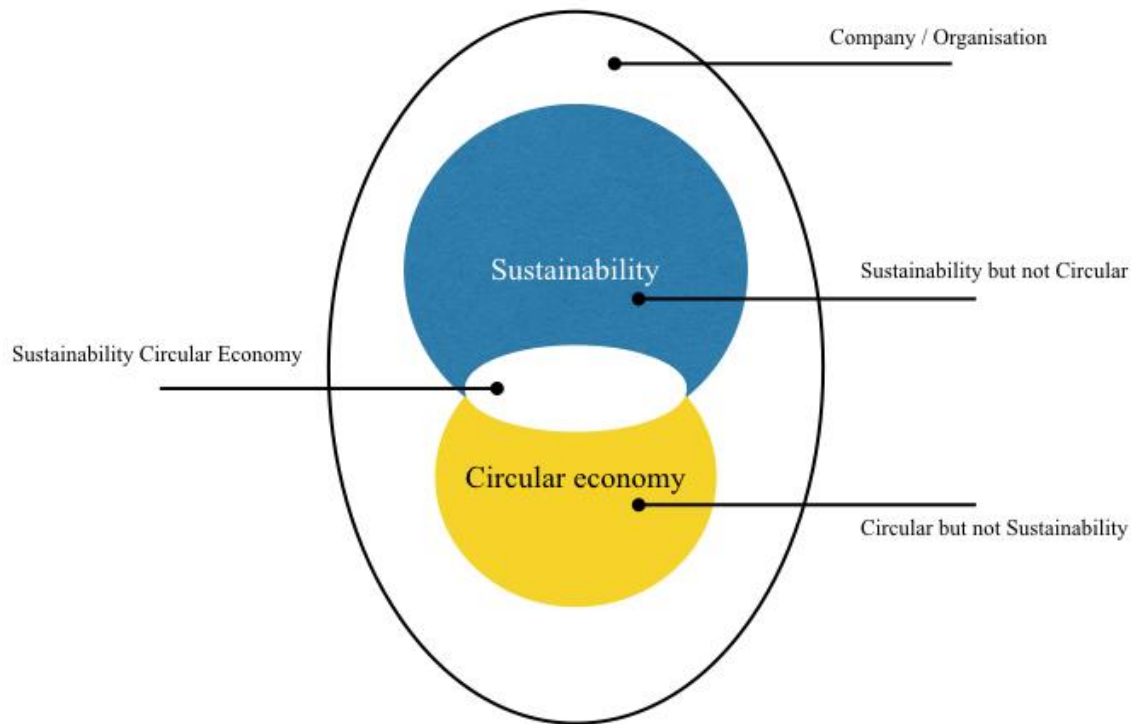
that are used to make traditional textiles in India. These fabrics are manufactured by machine as well as by hand using looms. The textile industry in India encompasses a wide range of activities, including the manufacturing of fibers, spinning yarn, weaving fabric, dying and printing textiles, cloth, and garments, as well as the production of commodities derived from wool, silk, jute, and man-made fibers. Cotton, jute, and silk are some of the raw materials that are sourced from farms specifically for the textile industry. The textile industry is the second largest contributor to job creation in India, which is only surpassed by the agricultural sector. However, a growing number of businesses are adopting the circular economy, and textile companies have the potential to benefit from doing so by addressing issues of sustainability and green promotion.

Circular Economy

In the circular economy, materials are continuously reused while nature is restored. This method is also known as the "circular economy." In an economy that operates on a circular model, items and materials are continuously recycled through processes such as maintenance, reuse, refurbishment, and remanufacturing. With the circular economy, materials are created with the intention of being reused indefinitely while also contributing to the restoration of the environment. Repair, refurbishing, remanufacturing, recycling, and composting are all examples of practices that are utilized in a circular economy to extend the life cycles of materials and products indefinitely. The circular economy addresses climate change as well as other global challenges such as the loss of biodiversity, pollution, and waste. This is accomplished by disentangling economic activity from the consumption of limited resources. There is no doubt that chief executive officers are seeking for ways to lessen their influence on the environment, cut down on waste from operations, and ensure that expensive resources are utilized more effectively. Here are few points which companies can practically work:

1. Conduct a waste management audit to identify “leakage’ points in your value chain.
2. What is costing your company the most - likely assets and overheads that are hotspots for both emissions and cost savings.
3. While conducting a waste audit, be mindful of internationally standardised codes. Since codes can vary between countries, certain waste material can be exported to specific markets.

Fig 1. Sustainability - Circular connection



It can be challenging to build a circular business model, and if you choose the wrong technique, it could end up being expensive. When it comes to achieving success, one of the many things that must be examined is a strategy that takes into account the company's strengths, weaknesses, opportunities, and threats, in addition to any operational constraints that may exist. Our take-make-waste system needs to be altered in every element, including, but not limited to, the management of resources, the production and usage of products, and the processing of trash after consumption. Simply put, this is the only way to guarantee that a thriving circular economy will be beneficial to every single person on the planet. By divorcing economic activity from the utilization of limited resources, the circular economy addresses climate change as well as other global challenges such as the loss of biodiversity, waste, and pollution. The chief executive officers of companies are obviously interested in minimizing their influence on the environment, avoiding wasteful operations, and making more efficient use of expensive resources. Building a circular business model, on the other hand, is a benefit, and if you execute the appropriate strategy, it might result in a significant positive impact for your firm. Success is determined by a number of different elements, one of which is the selection of a strategy that is in accordance with the capabilities and resources of the organization while simultaneously managing the restrictions of the operations. Every aspect of our take-make-waste system needs to be redesigned, including the management of resources, the production and utilization of products, and the processing of materials after consumption. Not until then will we be able to establish a healthy circular economy that is to the advantage of every person on our planet. It is possible to gain large benefits by pursuing business prospects and becoming a part of the circular

economy as a major change program. These benefits are not just for the textile firm, but also for the earth and the people who live on it.

Starting the Circular Journey

The circular economy in the textile industry is comprised of five pillars, and the incorporation of these concepts within the industry can facilitate the transition to a model that is more ecologically conscious and sustainable. When these five pillars of inputs are used in industrial processes, a circular economy is created. This allows for the reduction of waste and pollution, either in part or in its entirety. Waste transforms into an asset rather than a liability that requires you to pay to dispose of it. Born-circular manufacturers can anticipate cheaper prices for their production inputs because it does not have to be mined from virgin resources; rather, it is derived from surplus materials, recycled materials, and garbage.

1. Reduction
2. Reuse
3. Refurbish
4. Repair
5. Recycling

Reduce

To lessen the influence that textiles have on the environment, the industry should make minimizing resource use a top priority. The creation of long-lasting products, the utilization of environmentally friendly components, and the enhancement of manufacturing procedures are all included in this. In order to break free from the culture of fast fashion and throwaway items, the notion of "slow fashion" advocates the purchase of fewer items of greater quality. To cut down on waste, you should reuse the software-as-a-service.

Reuse

The reusing and recycling of textile items is the foundation upon which the circular economy is constructed. It encompasses activities such as up-cycling, pre-owned marketplaces, and clothing rental services, all of which are aimed at extending the amount of time that things can be helpful to consumers. Reusing materials might significantly cut down on the amount of textiles that are thrown away, which would be beneficial to the textile industry because it would lessen the need for new materials.

Recycling

The final phase in the process of developing a circular economy is going to be recycling textiles. In order to complete this process, you will need to collect old fabrics and then change them into new materials. These technological advancements have made it possible for the textile industry to recycle used garments. Two examples of these advancements are chemical recycling and mechanical recycling. In addition, recycling reduces the amount of new materials that are required, which in turn leads to less adverse effects on the environment, particularly from the textile industry. You can either make something new out of old textiles and clothing that aren't selling, or you can get rid of them if that doesn't result in any success.

Refurbish

Renovating in a sustainable manner means minimizing the negative effects on the environment. This can be achieved by the use of technology that are efficient in terms of energy consumption, the reduction of the use of potentially hazardous materials, and the conversion of buildings to make use

of renewable energy rather than non-renewable energy. If we want to improve our ability to be sustainable, we need to strengthen our capacity to satisfy the needs of the current generation while also being able to meet the expectations of future generations. In order to create a future that is sustainable, it is necessary to find a balance between the protection of the environment, the growth of the economy, and the well-being of people. Because of this, there is a pressing need to make progress toward more effective utilization of resources, a reduction in waste, and a stronger dedication to social justice and environmental protection.

Repair

Maintenance and sustainability are closely linked in order to facilitate the development of a circular economy by extending the lifespans of products and reducing the amount of trash produced. Repair, reuse, and recycling things are more cost-effective ways to save money, cut down on waste, and lessen the impact that manufacturing has on the environment than simply throwing them away. The act of repairing something, as opposed to throwing it away, involves fixing it. We can extend the lifespan of the product and reduce the amount of trash produced by correcting defects rather than replacing complete components.

Advantages of Textile Circular Economy

1. It reduces the environmental and claimer impact of an industry because of the efficient and effective supply chain life cycle.
2. An opportunity for selection of materials for second life and identification of methods to facilitate the reuse and recycling phases of textile waste.
3. Adopting the principles of sustainability and attracting and acquiring a target group of green consumers.

Reinventing value in the circular economy

As a result of a fundamental rethinking of value creation, acquisition, and distribution, a circular economy requires a complete overhaul of the processes and tactics that are utilized by businesses. The value chain as a whole needs to be completely rethought in order to accommodate this transformation; it is not enough to simply make a few tiny adjustments here and there. In order to generate value in a circular economy, it is necessary to go beyond only selling a product and instead provide consumers with advantages that will last for a longer period of time. Businesses are required to reevaluate their customer connections in order to shift from transactional engagements to long-term collaborations as the focus shifts from value in transactions to value in use. As the goal should be- ***If the organsiation is not protecting the environment and following sustainable practices, don't do business with that organsiation.***

Spending money on learning what customers want and delivering individualized solutions and services to help things endure longer while putting an emphasis on value-in-use is something that companies should do. It is necessary to have a complete feedback and engagement framework in place in order to guarantee that products and services would expand in response to the requirements of customers. Formal feedback and experience bring about a greater level of maturity for an organization, allowing it to examine its goods, earnings, and processes in order to improve employee engagement.

To satisfy the value-in-use need for high-quality, long-lasting product design, businesses are motivated to acquire sustainable materials and use production techniques that extend product lifespan.

This is done in order to meet the demand for long-lasting product design. In addition to this, it is necessary to offer consumers incentives to engage in circular behaviors, such as returning items to be repaired or recycled rather than throwing them away.

Revenue models evolve through value capture

The process of value capture becomes more fluid and innovative as revenue models evolve to suit the market's and the environment's sustainability requirements. Circular models alter concepts of ownership and value by including:

Participating in the sharing economy allows businesses to reach new sorts of customers who prioritise accessibility and convenience over ownership. This model increases each product's consumption, hence reducing resource utilisation.

- A) To attract community-oriented consumers, firms can make their products more shareable and present them in an understandable manner.
- B) Remanufacturing frequently increases the life of items and components by bringing them to equal or better than new condition. Product returns, remanufacturing logistics, and reselling refurbished goods are all critical factors for firms.
- C) Reduced costs of raw materials, increased customer loyalty, and opportunities to create new services.
- D) Addressing a balance between the economics and the least energy and resource intensive pathways and the best environmental performance and social outcomes across life cycles. In addition to establishing new income opportunities, firms may contribute to the economy's sustainability and efficiency by approaching value capture from multiple perspectives. These models are built on a deep understanding of consumer behaviour, creative pricing techniques, and a dedication to circularity.

Reimagining value delivery as a service-oriented process

According to this point of view, the distribution of value is more of a service than a transaction. As a result of a process that is centered on providing service and a value delivery strategy, it is not a single purchase but rather a recursive cycle of use and reuse, followed by more usage. In order to successfully move to longer product lifespans, it is necessary to place a significant emphasis on maintenance and servicing. Businesses have a responsibility to make sure that their products are long-lasting and simple to fix. Because of this, it is possible that new abilities in product service and maintenance will be necessary, in addition to modifications to the design that will make it easier to perform repairs and maintenance. As items reach the end of their first or subsequent lifecycles, businesses should have procedures in place to facilitate the redistribution of those products to new users and the transfer of those products to facilities that are dedicated to recycling or remanufacturing materials. These solutions provide an increase in the product's durability while simultaneously lowering the amount of additional resources that are required. When the usable life of a product has come to an end, it is of the utmost importance to save anything that can be recycled, including the components and materials that make up the product. In order for businesses to be able to recycle or reuse parts that are still usable, they need to devise methods for deconstructing objects.

Circular economy as a blueprint for a more sustainable future

When one considers the path that has been transformational since the 1990s, it becomes abundantly clear that adaptation and vision are vital for survival. In comparison to the tremendous changes that

the circular economy has brought about, the digital revolution was merely a precursor to those changes. Urgency can be expressed in two different ways: (A) Businesses that continue to use outdated linear models run the risk of following in the footsteps of their predecessors who were unable to adapt to the digital revolution; (B) The dedication to environmental conservation is essential in order to preserve the delicate balance of our ecosystems. What is more than just another economic model is the concept of the circular economy, which has the potential to be the foundation upon which a sustainable future might be built.

Let us move forward to the year 2030 with the idea that being competitive is identical with being circular, and let us innovate while simultaneously realizing the interconnectedness of our businesses and the environment. Our legacy will be determined by the efficacy and efficiency with which we apply sustainable practices; success will be evaluated not only by the financial benefits we receive, but also by the amount of money we contribute to the development of a global economy that is more sustainable.

Challenges and Opportunities

Although there are numerous benefits associated with the transition to a textile circular economy, there are also substantial challenges involved. A willingness on the part of all of the stakeholders to conform to the norms and governance is one of the most important problems. Other challenges include the requirement for new technical breakthroughs, improved client awareness, and comprehensive company-wide collaboration. Nevertheless, being environmentally conscious offers various advantages to businesses, such as the possibility of becoming more imaginative, the creation of additional jobs, and a rise in the recognition of their brand. Legislation is being enacted by governments all over the world in order to recognize the importance of sustainable practices and to encourage the textile sector to adopt principles of circular economies. The Environmental Protection Agency (EPA) initiatives, waste reduction goals, and financial incentives are some examples. Through the alignment of their policies with the objectives of the circular economy, governments have the ability to inspire positive change.

Practical approach and framework

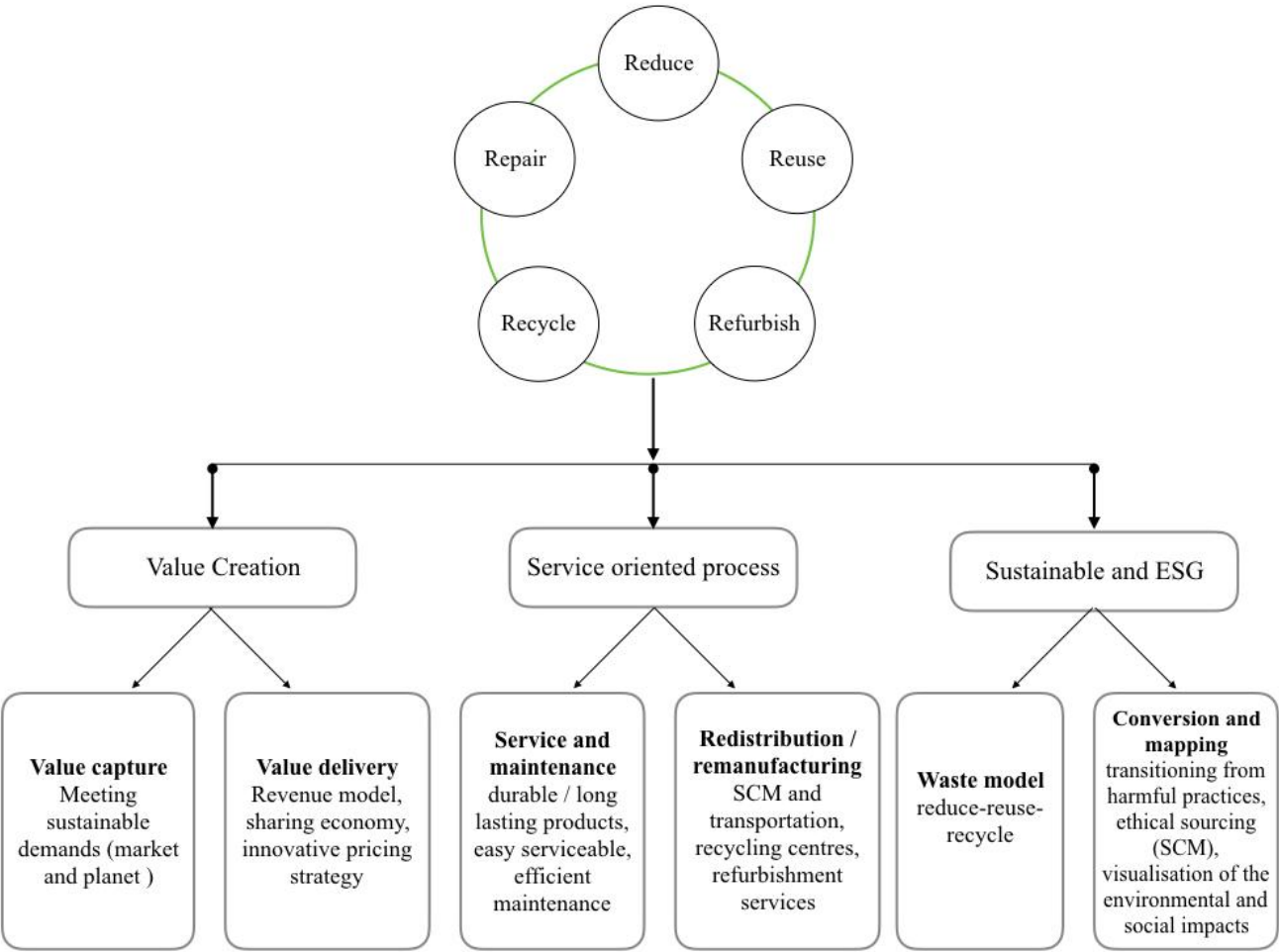
1. Develop a conscious awareness of the internationally standardised codes that are part of the Harmonized System. Understanding these codes can help expedite the process of locating potential customers and partners for your waste goods to certain markets. This is because codes might differ from country to country. Don't let garbage not be wasted.
2. Use online markets to your advantage. Companies are able to communicate with one another through platforms, which grants organizations the ability to monitor, share, and sell their underused assets, as well as provide possibilities to trade materials.
3. Due to the fact that these individuals are responsible for day-to-day operations at the ground level, training will be essential for the procurement department and the skills necessary to execute sustainable sourcing procedures.
4. Organize and cultivate commercial connections and networks within the region. It is possible for the trash or byproduct of one company to be utilized as raw materials by another company. Engage employees in the process of discovering opportunities for circularity while simultaneously ensuring that circularity is incorporated into the fundamental business plan.

Conclusion

In order for the textile industry to have any hope of surviving in the long run, it is absolutely necessary for it to make the transition to a circular economy. Businesses have the ability to contribute to the creation of a more sustainable future by reducing waste, reusing and recycling products, and conserving resources. These are all steps that may be taken to make the future more sustainable. There exists a correlation between an increase in the demand for textiles that are produced in a sustainable manner and a consumer base that is more morally and environmentally concerned. Furthermore, there is a correlation between the two. The fact that this is the case implies that the circular economy is not only a viable business strategy but also a moral imperative. As opposed to being only a fleeting fad, the circular economy in the textile industry is ushering in a future that is more sustainable and favorable to the environment, not only for the industry as a whole but also for the entire world. If you make use of information that is up to date and correct on your internal inventory, you will be able to speed up the process of generating clothing. The fact that a "circular" business model provides improved customer service, lower costs, and more resilience is among the most major advantages that it possesses in comparison to a "linear" or traditional strategy within the corporate world. Only a few of the most significant benefits are listed below.

Model of Sustainability and Circular Economy for Textile Company

Fig 1. A Circular Business Model for Textile Industry



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