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# CIRCULAR BUSINESS: THE SUSTAINABLE MOOD OF THE GLOBAL BUSINESS ENVIRONMENT

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***Abstract*:** The purpose of this study is to highlight the need of circular business for the current global business society, global populace and the global environment. The current research brings a profound plunge into the new methodology that the worldwide business economies are looking for their organizations. The old age linear business plans of action stuck to the standard plans of taking, making and wasting. Nonetheless, the circular business plan of action chips away from the standard business protocol of taking, making and wasting. The circular economy gives critical significance not exclusively to the capital additionally at the same time it saves more grounded thought for environmental manageability. The circular trade acts as an effective means to gain sustainable improvement goals of the United Nations that encompass, true health and well beings, easy water and sanitation, cheap easy power, simple works and financial hike, manufactory, innovation and infrastructure, sustainable towns and groups, accountable intake and manufacturing, climate alteration, life existence underneath water, and life existence on land. In the ongoing worldwide situation the business area models are transforming from linear business plans to circular business plans. Subsequently, to investigate the various occurrences of circular businesses, through this study it is investigated that worldwide giant companies are setting new models for a circular economy that will empower the new businesses, which will be exclusively not only be gainful for the people in the future but also for the worldwide environment. In the present study it is inferenced that circular business is a multidisciplinary approach targeting sustainable development goals laid down by the United Nations.

**Key words: Circular business, sustainability, sustainable development goals, environment, carbon footprints, global business.**

## I. INTRODUCTION

### *1.1 Objectives of the study*

The current study takes a profound investigation on circular business issues to different perspectives depicted as under:

- Circular business is as an answer for the worldwide carbon footprints.
- Circular business instigates recycling of human made items.
- Circular business promotes efficient utilization of ecological stores.
- Circular business empowers renewable energy sources.
- Circular business supports sustainable development goals of the United Nations.
- Circular business is capable of creating green jobs.
- Circular business is protecting worldwide ecological reserves.

### *1.2 Research Problem*

In the current study the research examines circular business regarding:

- Global warming adding to climate change and further more raising the carbon footprints.
- Fossil fuel utilizations in the world.
- Renewable sources of energy can act as better optional energy source.
- Waste removal is a test for the global nations.
- Global ecological materials are debilitating.
- Circular business statistics.
- New Startups are approaching circular businesses.

## II. LITERATURE REVIEW

Anne P.M Velenturf and Purnell (2020) studied that the circular economy is the integral goal of the sustainable development goals laid down by the United Nations. Burton (2021) reported that in linear business the natural stuff are isolated from the biological sources recasted into useful derivatives and further disposed off. The linear business models truly work for the economic gains without giving due importance to nature. In the recent commercialization timeline the linear business models resulted in huge capital assets for the global corporations around the world. The global business economy runs on the raw materials obtained from natural sources. Grosse and Mainguy (2010) inferenced in their investigation that the large abuse of the environment for isolation of the raw material for the business has now created exhaustion of the biological raw material supplies in the world arena. Biological degradation is thought to be the severe problems in the existing business models but at the same time the by-products that most global corporations manufacture are likely to act as waste and non eco friendly after being delivered to the consumers. The effect of non eco friendly byproducts being generated during the manufacturing processes and also the waste remnant upon product usage by the consumer is becoming a serious issue for the world. It was stated by the OECD (2018) that a circular business has a high approach towards the nature health. Global corporations are nowadays investigating new ideas to overcome the damages being caused during their business run to the natural environment. It was analyzed by UNEP (2021, b) that the new businesses are moving from linear business towards circular business. The linear business model is being expressed in fig. 1.

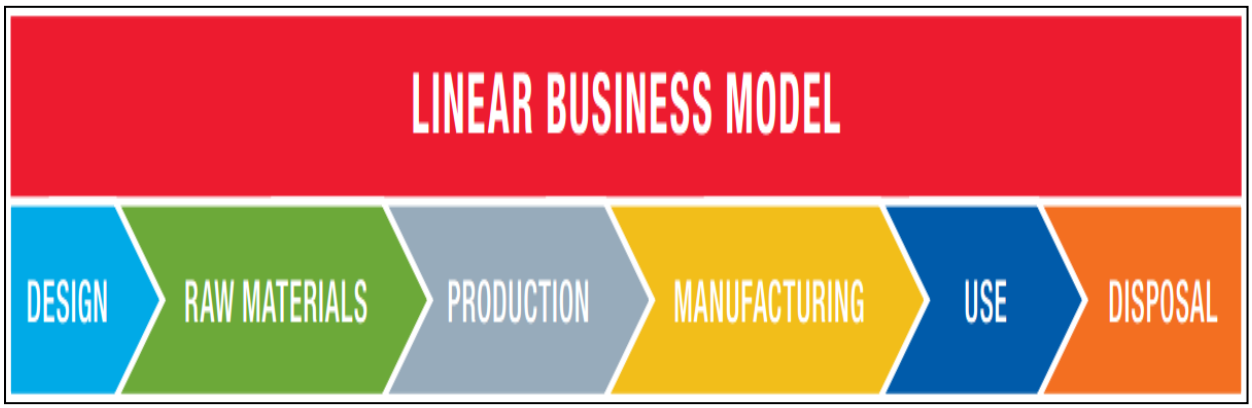



Fig.1. linear business model
Source: https://newsroom.posco.com

Concerning to circular economy world economic forum depicts that, a circular economy is an industrial strategy that is beneficial or regenerative by discretion and layout. Phore and Shamuganatham (2021) reported that circular trade substitutes the end-of-life notion with repair, transitions towards the usage of alternative power and eradicates the usage of poisonous reagents that spoil reuse and replacing to the ecosystem and strives for discarding of trash via the excellent format of stuff outcomes strategies and trade norms. Like any other trade models circular business standards also follow certain prototype as depicted in fig 2.

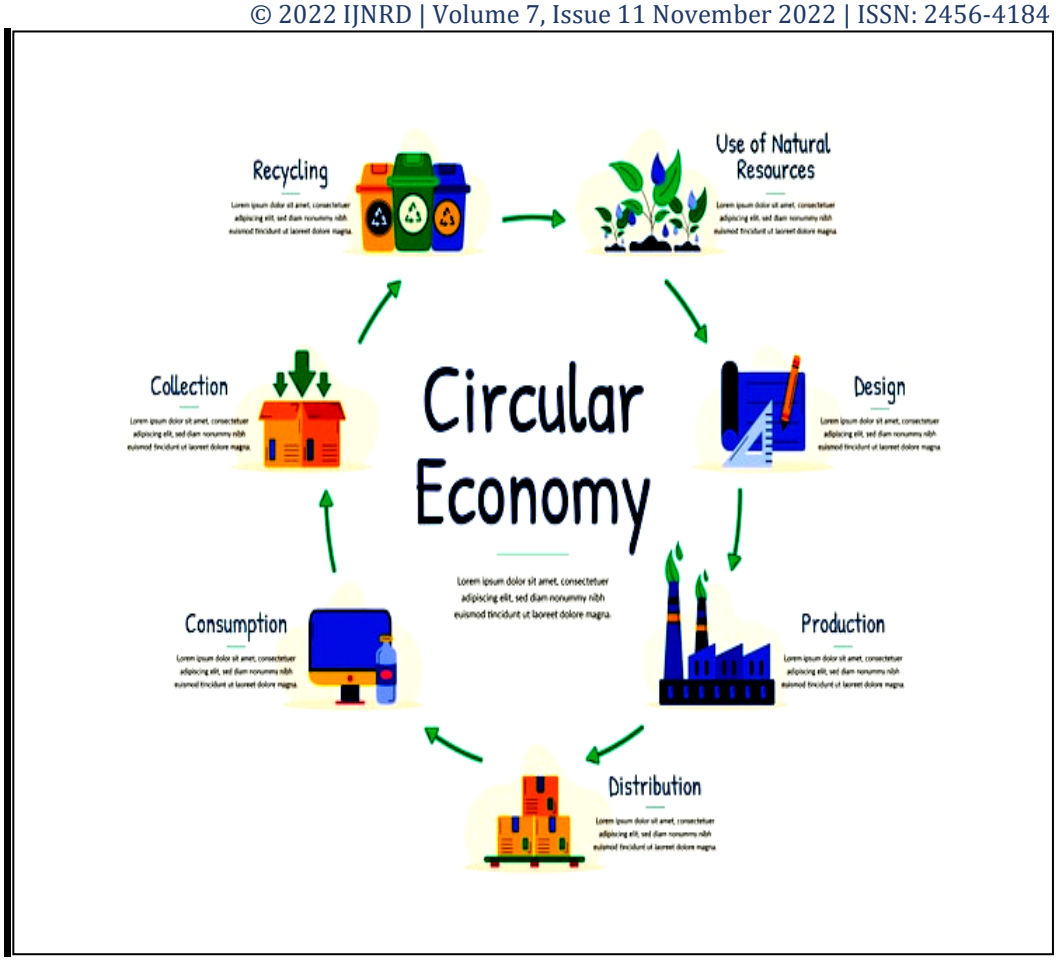



Fig.2. circular business model
Source: https://www.freepik.com

Ekins et al (2019) studied that the core object of the circular business economy specifically deals with environmental sustainability. It's a business economy that duly considers the significance of environmental and social impact of the way we buy and utilize materials, and finally the way we can maximize the beneficial utilization of our resources. In one of the latest studies it was inferred that if all the European states adopt the circular business economy then this would raise around 1.8 trillion Euros till 2030 (European Commission). UNDP (2021) stated that there are three broad benefits that can be achieved by adopting circular business that include economic benefits, social benefits and environmental benefits. The manufactured products can be applied for recycling and reuse; this provides a secondary manufacturing input source (Eco Green, 2016). Latham (2021) depicted that the new raw material is definitely costly whereas the recyclable manufactured product can act as a cheap raw material for the business. Thus circular business is economically beneficial. The consumer with time has also changed their mindset. Martins (2022) reported that the consumers are now more aware of nature and often support eco-friendly products. Thus the circular business is highly appreciated by the modern day consumers and therefore has a positive impact on the social environment. The circular business discourages the process of utilizing material from nature and finally disposing of it in nature. Kennedy and Linnenluecke (2022) in their investigations concluded that circular business keeps the importance of the environment into consideration and adopts the resilience of the environment. In addition to this the circular business also plays a key role in tackling climate change (Ellen MacArthur Foundation, 2019).

## III. RESEARCH METHODOLOGY

The current study can be classified under exploratory qualitative research. For this purpose, the secondary data was required. This secondary data was isolated from various secondary sources like the journal articles, websites, books, news articles, blogs, magazine articles, organizational reports, and image sources. The secondary data after collection was subjected to in-depth analysis to evaluate the current study and further predict the conclusion and suggestions. The research design for the present study is highlighted below in the fig.3

**Exploratory Qualitative Research**

⇩

**Data Collection**

⇩

**From Secondary Sources**

⇩

**Secondary data is subjected to in-depth analysis**

⇩

**Evaluation and Analysis of secondary data**

⇩

**Conclusion and suggestions**

Fig..3. Research design for the present study

## IV. RESULTS

### 4.1 Practical strategies for the circular business

Adopting a circular business might seem to be an easy task to achieve but there are various hurdles to cross and to obtain a circular business (Sousa et al, 2018). The circular business can be implemented by the following four significant plans that include narrowing resource loops which deal with using less material per yield, delaying resource loops which deal with boosting by-product age, locking resource loops which means reutilizing product and revitalizing resource loops which means recharging the biological material being utilized in manufacturing processes (Bocken and Geradts, 2022).

### 4.2 Ten Decalogue for the circular business

Sustainability is the principle behind the circular business. A circular business incorporates repairing, recycling, reusing, refurbishing and remanufacturing with minimum waste of power and natural reserves (Semplonius, 2021). The world business community has classified business with a term viz WILD meaning wasteful, idle, lopsided, and dirty (Lombard Odier Group, 2020). Biodiversity has been the key source of transnational economic growth which has further led to over abuse of the natural reserves around the globe (OECD, 2019). As per the Paris agreement the global nations have to target to maintain the world temperature rise to below 1.5 degree Celsius (UNEP, 2021, a). In response to this, circular business can act as a pivotal aspect to control climate change (Andre and Englund, 2021). To achieve sustainability in the global scenario business stakeholders imply to follow ten decalogue principles that can bring the circular business into action. These principles of circular economy are being depicted in fig. 4.

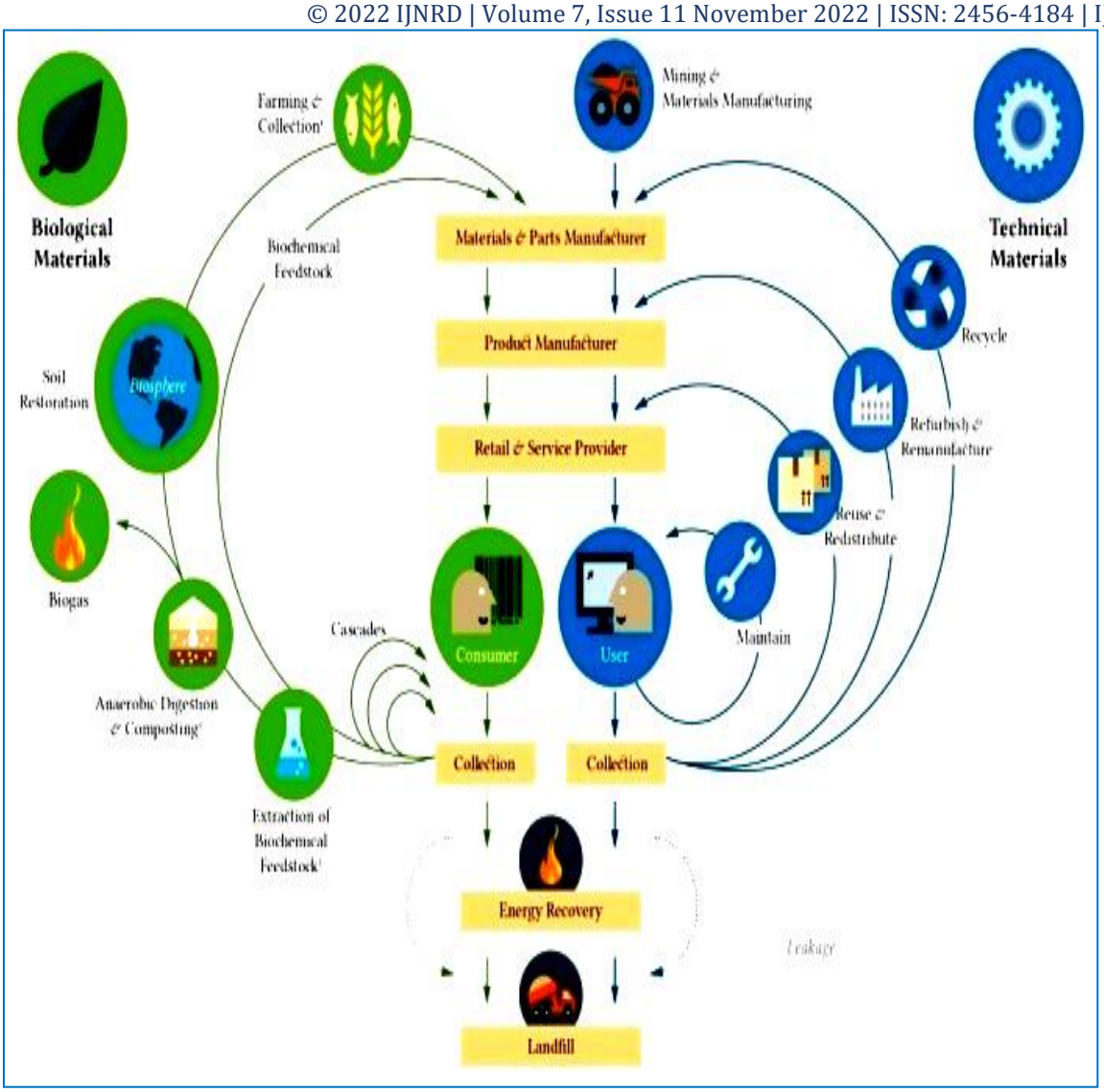



Fig. 4. Principles of circular economy
Source: https://4.bp.blogspot.com

### 4.2.1 First Decalogue: Refusing

The usage of goods in the global society has increased enormously. Various statistic figures suggest that there is unnecessary usage of goods by the global consumer worldwide. This has marked overburden on the natural reserves and global requirement has given a shoot to the biological footprint (Roach et al, 2019). By following the policy of refusing the overexploitation of the natural reserves can be reduced to a greater amount. The circular trading follows the principle of refusing thus preventing the abuse of natural reserves and upholding sustainability in the biological regime (EIB, 2020).

### 4.2.2 Second *Decalogue: Rethinking*

Every business before initiation requires thorough planning or thinking for its successful accomplishment. Traditional business approach did not give any importance to nature but the recent trends suggest that circular business is planned that gives equal importance to the environment. The thinking for environmental consequences concerning any business plays a pivotal part in circular trade (EIB, 2020). Moreover the investors in the corporation communities are nowadays motivated by the circular trade and playing a crucial role in inventing new business setups.

### 4.2.3 Third Decalogue: Reducing

The critical facet in the circular economy is to reduce the material size being used in the manufacturing operations (EIB, 2020). Most of the global business outlets result in over isolations of raw material from the natural reserves. In order to sustain sustainability this can only be decreased by reducing the manufacturing requirements at an exceptionally high rate.

### 4.2.4 Fourth Decalogue: Reusing

The circular business discards the orthodox trading principle of isolating, making and wasting. Circular business follows the decalogue of reusing the remnants left upon its utilization (EIB, 2020). The circular trading aspires to achieve zero carbon and nil waste objectives.

### 4.2.5 Fifth Decalogue: Repairing

In the circular business the corporations are aware of the hazards of the waste being dumped in nature therefore the waste especially the electronic or e-waste are being targeted to repair and further made suitable for reuse. This reduces the dumping problem of e-waste in the global nations. In recent years it's evident that various advanced nations have dumped their e-waste in the natural

environment of the advancing or poor nations. Thus in circular business repairing and reusing acts as an environmentally friendly action (EIB, 2020).

#### 4.2.6 Sixth Decalogue: Refurbish

In circular trading the refurbishing trend is increasing day by day and acting as a significant factor to a sustainable environment. In the process of refurbishing an old discarded product is remade by replacing its damaged components and restoring it to its original form. Refurbishing again is making the discarded product utilizable for the consumers (EIB, 2020). The refurbed market is growing at a faster rate in recent years. The use of refurbished items results in the reduction of e-waste, reduction of the load on the new material requirements for manufacturing and reduction in the carbon emission. The refurbished branded mobile phones being sold by ace mobile companies are driving the circular business to the next step.

#### 4.2.7 Seventh Decalogue: Remanufacture

The circular business also promotes remanufacturing decalogue. Various corporations manufacture different items which have multifunction but the items often bear the same components. Items upon discard can be subjected to recreating by using the old item components to create new items. This remanufacturing decalogue results in maximizing the resources efficiency and boosting the circular business (EIB, 2020).

#### 4.2.8 Eight Decalogue: Repurposing

An item once produced by the manufacturer is used by the consumer and further upon usage is being discarded. However, by repurposing the manufactured item it can be further utilized for a useful purpose (EIB, 2020). This transformation or repurposing decalogue can further enhance the recycling of the discarded product for a new purpose. For example an old train compartment is transformed into a healthcare unit or restaurant. The cloth accessories used in the aircrafts can be used for preparing bags and other items of daily necessity.

#### 4.2.9 Ninth Decalogue: Recycling

Recycling is another important decalogue for the circular business (EIB, 2020). Non degradable substances like plastic used in the manufacturing items poses a discarding problem. The circular business often brings new ideas to utilize such non degradable substances in landfill, road development etc. The paper once being used can also be recycled in the industries to make it available for secondary usage.

#### 4.2.10 Tenth Decalogue: Recovering

In circular business the waste being spawned after the utilization of the creations is further analyzed for its reutilization, for example the bio trash yields can be used to generate power in biogas plants that is an efficient basis of power. Through this action, power is received from the waste and simultaneously there is a reduction in the pollution and carbon footprint. Recovering circular business models are also significantly playing a key function in the waste managing strategy (EIB, 2020).

## V. DISCUSSION

### 5.1 Global circular economy movement

A circular trade is becoming more prevalent around the planet as both the enterprises and the populaces are attracted to this new trend of business practice (Atasu et al, 2021). The enterprises and public are both benefited by the circular business (Grabowska and Saniuk, 2022). Ecosystem awareness is boosting day by day in the global population that is one of the crucial factors for the success of the circular trade (Vagner, 2021). The new rules and regulations being established for running a business around the world are laying down more emphasis on the circular trading which is beneficial to global biological health. It can be interpreted that the global circular economy movement is being widely accepted by the global nations.

### 5.2 Advantages of the circular business

The birth of the industrial shift continued to develop pristine trade prototypes in the transnational arena for numerous years and gave birth to the linear business norms (Grabowska and Saniuk, 2022). Raw stuff isolated from the biological reserves are usually converted into useful products and further purchased and wasted by the consumers. The waste yielded by the linear business models could be estimated in tons worldwide (Glasco, 2019). It is a serious issue for the nature and global inhabitants, for which a new concept is required to develop. The linear business trade often contributes to massive carbon footprints in comparison to circular trade. A circular business carbon footprints target is depicts in figure 5.

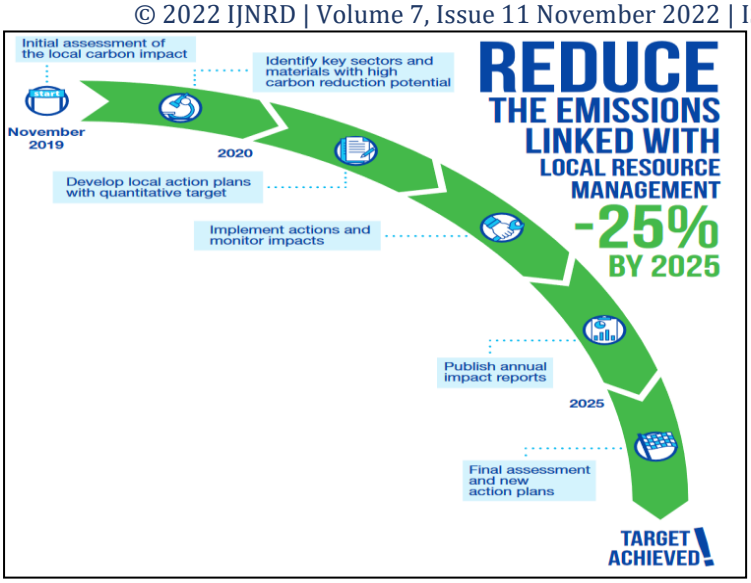



Fig.5. Circular business carbon footprints target

Source: https://www.acrplus.org

The circular business models acted as an effective alternative against the linear business models. It has several advantages, some of which are discussed as under:

### 5.2.1 Circular business minimizes greenhouse gas emissions

One of the most attainable aims of the circular trade is minimizing greenhouse gas emission (EEA, 2020). The circular business has the prospect to minimize carbon footprints. It uses renewable sources of energy which exhibits low carbon footprints. More-over the circular business releases nontoxic waste in the ecosystem which supports in establishing a non toxic ecosystem (WHO, 2018). Circular business censors fossil fuel consumption. The fossil fuel usage in the past few decades in the US, China, India, and European Union is depicted in fig. 6.

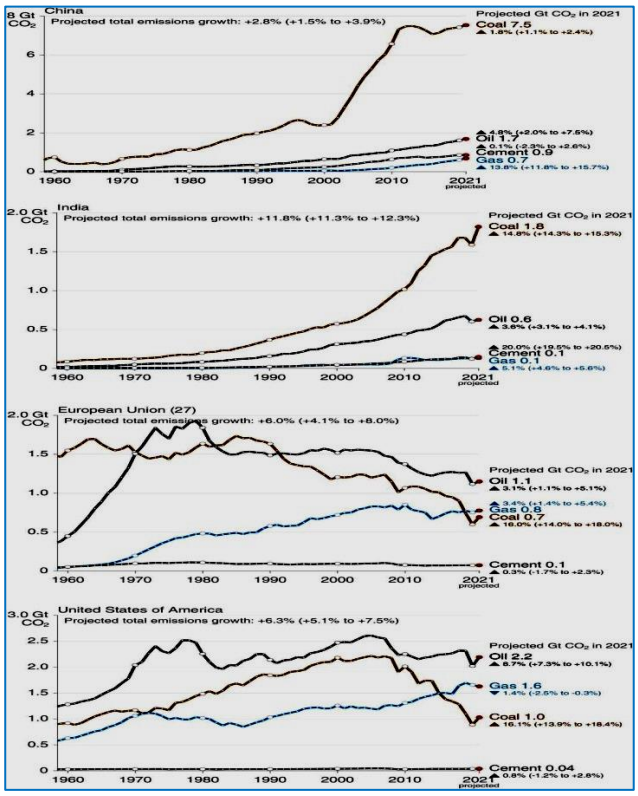



Fig..6. Annual fossil fuel use projection till 2021.
Source: *R B Jackson* et al *2022* Environ. Res. Lett. 17 031001

### 5.2.2 Circular business promotes resilient ecosystem

The circular business promotes the health of humans and that of the ecosystem (WHO, 2018). The important components of the ecosystem i.e. air, water and soil are often contaminated with wastes by the manufactured products of different classes of business in modern days this is becoming unhealthy not only to the ecosystem but also to public health. The circular business prefers to discard biowaste that can be reclaimed in nature and therefore the air, water and soil are safeguarded from being damaged. The

circular business encourages releasing non-toxic substances in the ecosystem in order to minimize climate change and environmental damage (Kennedy and Linnenluecke, 2022). Thus circular business promotes in building a resilient ecosystem as exhibited in fig. 7.

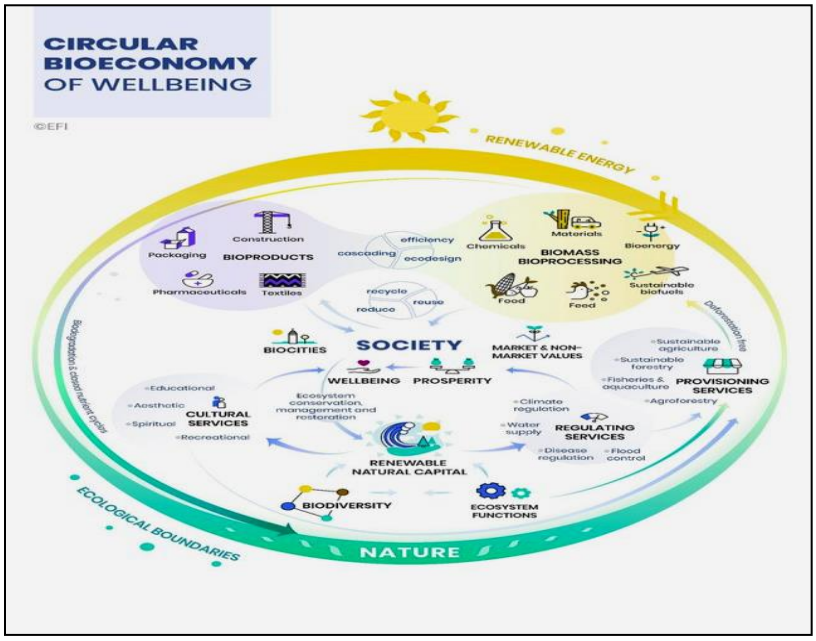



Fig.7. Circular business resilience
Source: https://thesolutionsjournal.com/2022/07/28/

### 5.2.3 Circular business promotes economic growth

The circular economy facilitates cheap biomaterial or reuse of trash as natural material that demands less financial inputs. In the circular business the acts of recycling, remanufacturing, refurbishing, reusing provide an efficient financial transition. Though various economists contradict the monetary expansion through circular growth, but they often suggest that it can act as a nice tool for economic growth in future (Lassi, 2020). The investors around the globe are pouring into the sustainable business as depicted in the fig. 8.

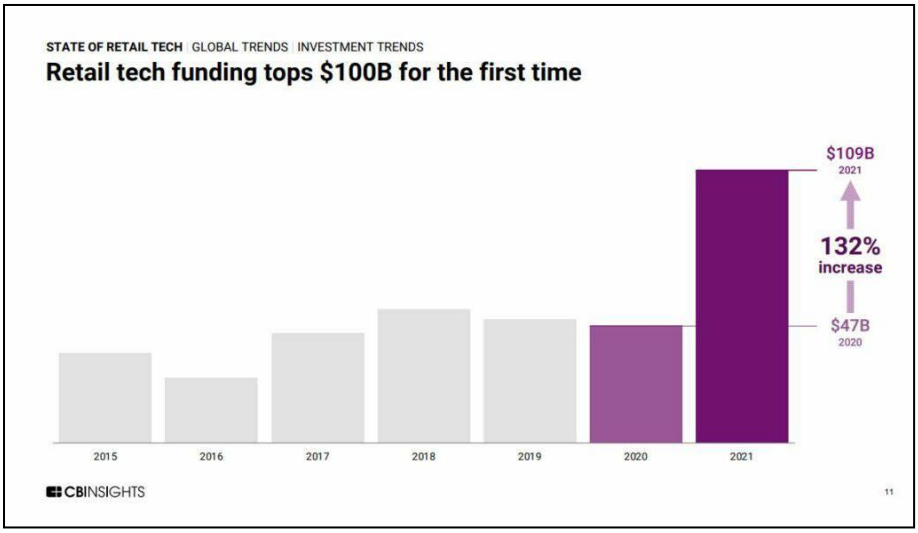



Fig. 8. Global investment trends in sustainable business
Source: https://www.cbinsights.com

### 5.2.4 Circular business generates green employment opportunities

The circular business prefers the practices like refurbishing and repairing that requires skilled employees or technicians who can perform these practices. The studies suggest that fresh green job options are generated by a circular business (Sulich and Soloducho-Pelc, 2022). In India green jobs are at a boom of 468% as corporations are hiring more green workers (Sarkar, 2022). The Indian green job statistics for the current year 2022 are exhibited in fig. 9. The employment demand in top 25 global nations through green jobs is depicted in the fig 10.

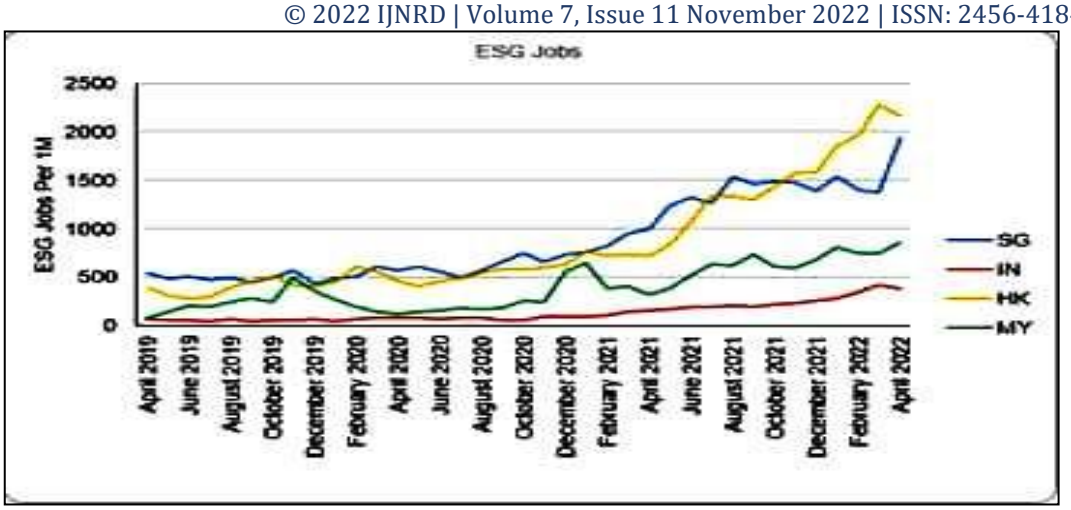



Fig. 9. Green job statistics in India
Source: https://www.cnbctv18.com

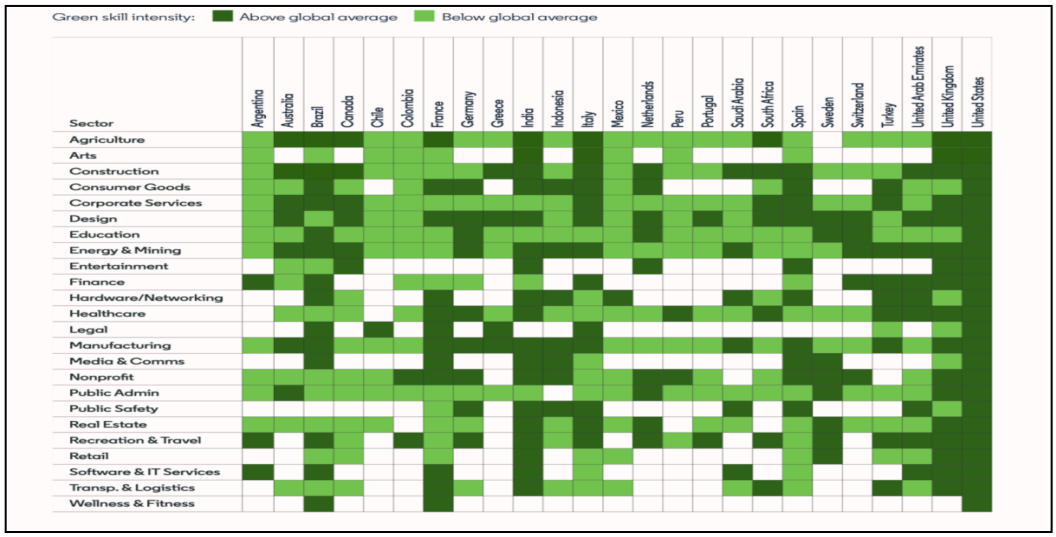



Fig.10. Green jobs employment demand in top 25 global nations
Source: https://www.weforum.org

5.3 Deterrents of circular business

Although circular business prototypes furnish to achieve several rewards in terms of business, finance, and ecosystem, there are certain grounds that have made this model of trade to establish slowly. Some of the pivotal internal and external deterrents of circular business are; internal deterrents including, company blueprint and strategies, monetary barriers, technical barriers, deficit of other sources, collaborations, product design and internal collaborators (Hina et al, 2020). The external deterrents include, consumer-related barriers, legislative and economic barriers, supply chain-related barriers and social, cultural and ecological barriers. The fig. 11. below exhibits the internal and external barriers of circular business.

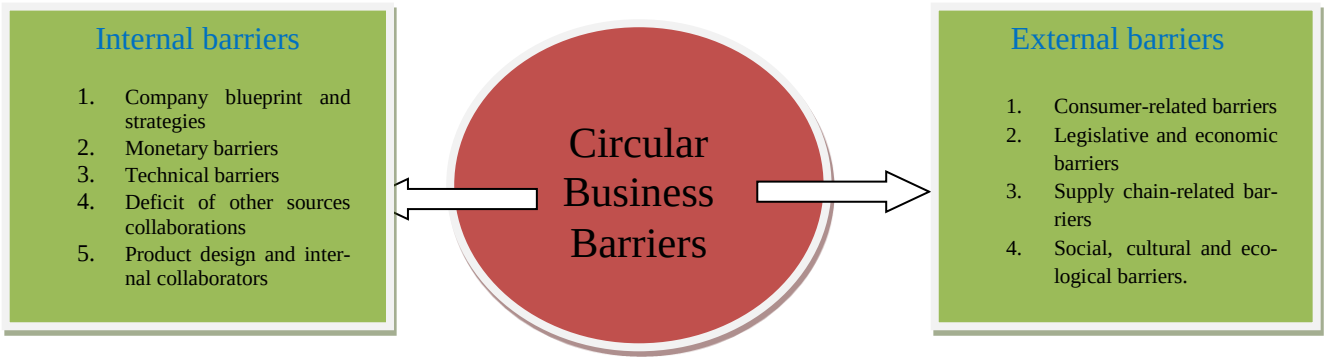



Fig.11. Circular business barriers.

**5.4 Circular business statistics**

In the year 2018, circularity gap report laid down by world economic forum exhibits that the global economy is only 9.1% circular (Kaufmann and Panni, 2020). Since then every year circular gap report is being presented. In the last five years the circular gap reports depicts that the global recycling was only 8.6% thus leaving a circularity gap of about 90% (Marino, 2022). In the last six years during the major climate conference COP 21 organized in Paris 2015 and COP 26 organized in Glasgow 2021 it was revealed that the global economy consumed around about half trillion tones of virgin materials that include, minerals, ores, fossil fuels and biomass (Haigh, 2022). After usage large volumes of such materials is being wasted and becomes an environmental issue. The waste often is associated with loss of ecological diversity, rising earth's temperature, air pollution and land dumping. The global land usage has risen to four times even outnumbering the previous estimates (Winkler et al, 2021). According to a report viz. 'limits to growth' in the year 1972 published by the club of Rome's, depicts that world populace consumed 28.6% billion tons (Circular Economy, 2022). In the year 2000, this consumption was reported to be 54.9 billion tons and in the year 2019 it just crossed the 100 billion tons mark (Circular Economy, 2022). The rise in consumption is directly proportional to the rise in the waste level, in the global scenario. The material extraction projected from year 1972 to 2050 is exhibited in fig.12.

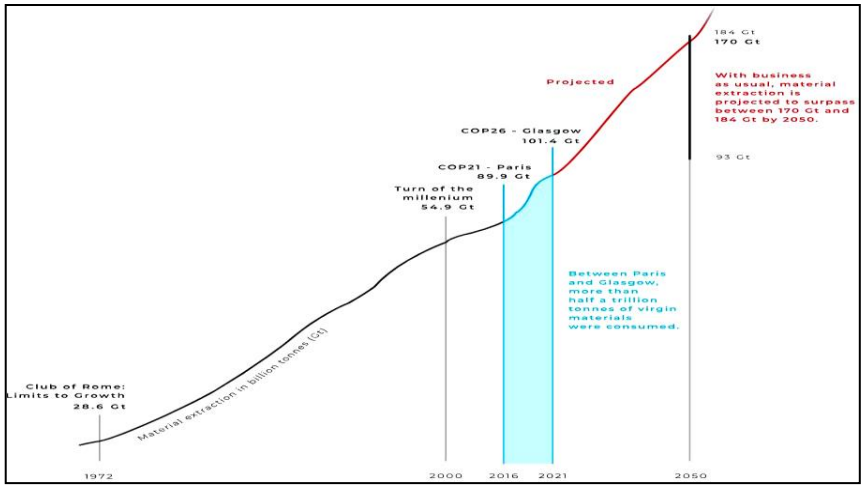



Fig.12. MateriaL extraction projected rates in billion tones (1972-2020)
Source: https://bonpote.com

In the year 2021, the intergovernmental panel on climate change stated that the alarming change in the global weather is due to the human activities (United Nations, 2021). Circular economy suggests living in the limits of the natural means. It exhibits that if human being starts living beyond the limits set by the nature then consequences are to be faced by the human populace globally. China's circular business promotion law of the year 2008 and the European commissions' circular economy action strategy of the year 2015 definitely have proven an asset to the global social beings (Circular Economy, 2022). The China's law and European action plan introduced the circular economy being the two leaders of the global economies, accounting for 35% global GDP and 25% of the global population (Circular Economy, 2022). A pioneer report presented by Ellen MacArthur Foundation that the European Union alone claimed a gross yearly benefits of 1.8 trillion Euros, of which major contributions was that from circular businesses (Ellen MacArthur Foundation, 2015). The various traits of the circular economy now are equipped with multi governmental and multilateral guidelines and objectives, gathered from the European Union green contract and the European circular trade strategy plan, to accomplish sustainable development goals or SDGs (Circular Economy, 2022). The circular business is now also tagged with resilience after the onset of the Covid 19 pandemic (Circular Economy, 2022). In the recent five decades, the global populace has just doubled. The current world population is 7.97 billion as of September 2022 (Worldometer). The rise in global populace has tremendously raised the global ecological material abuse.

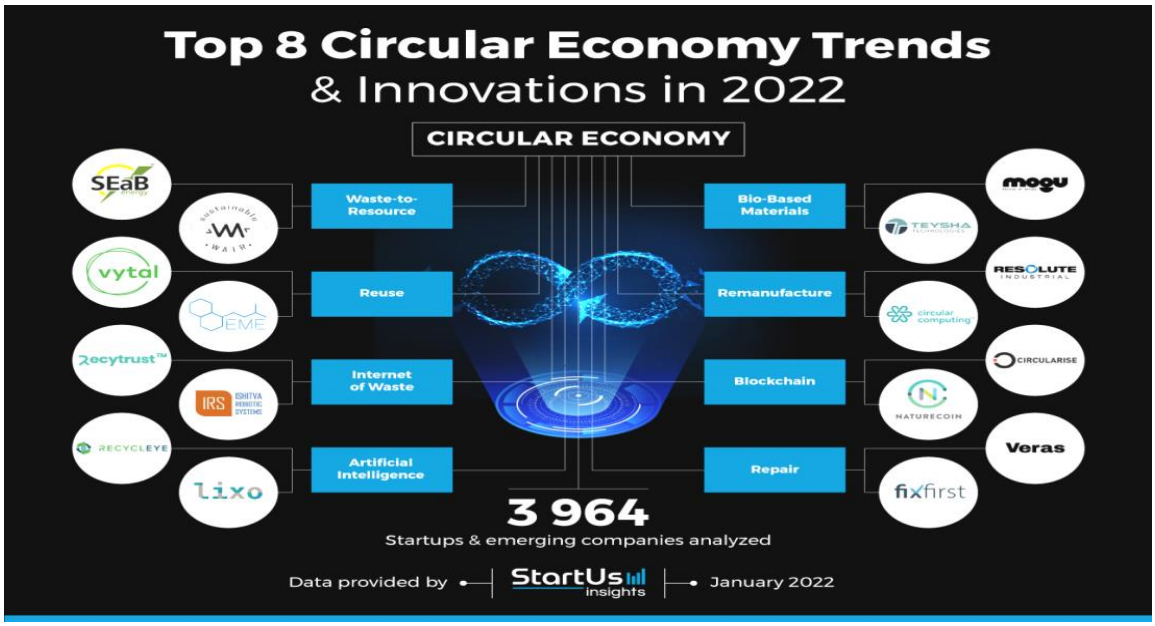
The material flow in the business economy suggests unleashed increment from 27 billion tones in the year 1970 to 84 billion tones in the year 2015, which is just an alarming achievement (Circular Economy, 2018). The exponential use of man created products like, phones, houses till recently suggest that the mass of such products has just outstretched the biomass of ecological diversity. Till 1900 the rise of human made products in the global market was just 3% of the global biomass (Laville, 2020). In the year 2020, the human made mass has outstretched to around 1.1 terra tons which is above the biomass of the globe (Laville, 2020). According to the International Resource Panel, utilization of product by the human populace it is all set to increase in between 170 to 184 billion tones by 2050 (IRP, 2017). Although there was a drop in the carbon footprint during the Covid 19 pandemic to 6%, but the Green House Gases or GHG projection was estimated to exceed to 4% by 2020 in the G20 nations (Climate Transparency, 2021).

The majority of the carbon foot prints in the global society has been contributed by the seven basic societal requirements that include, housing that is contributing 13.5 billion tons of carbon foot print, services, mobility is contributing to about 17.1 billion tons of carbon footprint, nutrition is contributing to 10 billion tons of carbon footprint, land use, land use change and forestry or LULUCF is contribution to 4 billion tons of carbon emission (Circular Economy, 2022). The remainders 30% carbon footprint is being designated to healthcare, consumables and communications (Circular Economy, 2022). All these societal requirements pose a big responsibility on the ecological diversity. It is estimated that only 8.6% of 100 billion tones of ecological resources is being recycled back to nature (McGinty, 2021). The circular business provides a framework that is favourable for sustainable development without paying load on the use of the primary ecological resources. The circular business enables the global society

to achieve the Paris Agreement Goal of global temperature below 2 degree Celsius and ideally maintain it at 1.5 degree Celsius (Circular Economy, 2022). Circular gap report of the year 2022 depict that if relevant steps are taken to move away from the linear business and stepping forward towards the circular business shall exhibits the carbon footprint dropping to 39% and ecological resource usage by 28% that shall be pivotal in meeting the goals of the Paris Agreement (Circular Economy, 2022).

### 5.5 Circular business startups in the current year 2022

By repurposing trash into resources, circular economy solutions lengthen the lifespan of products and materials. Due to their reliance on technology like artificial intelligence (AI), the internet of things (IoT), and block chain, startups and smart cities are important drivers of circular economy trends (StartUs Insights, 2022). The fig. 13 below provides a summary of the top eight circular economy trends and innovations that are affecting organizations globally. The fig. 14 shows the effects of the top eight circular economies.




.Fig. 13. Top eight circular economy trends and innovations in 2022.
Source: https://www.startus-insights.com

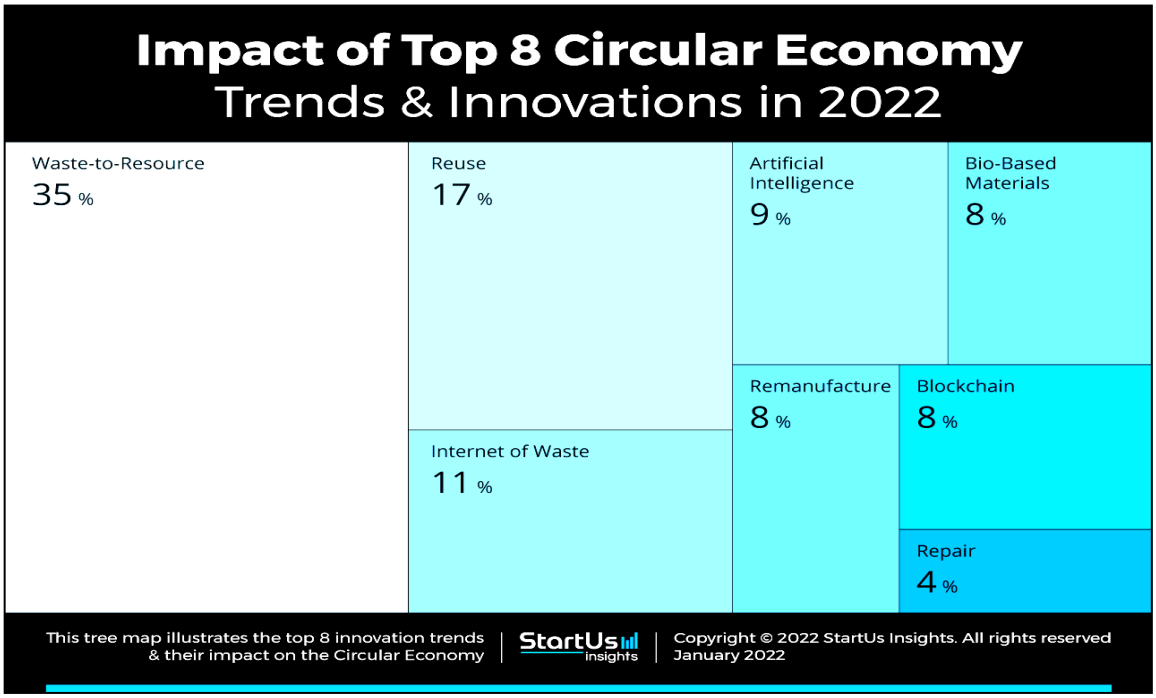



Fig.14 Impact of top 8 circular economy trends and innovation in the year 2022.
Source: https://www.startus-insights.com

The top 8 start up trends in the year 2022 based on circular business have been summarized in the table 1.

Table 1. Top eight startup trends of the year 2022 concerning circular business

Source: https://www.startus-insights.com

| Name of the trend | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Waste-to-resource / Name of startup** | **Reuse / Name of startup** | **Internet of Waste / Name of startup** | **Artificial intelligence / Name of startup** | **Bio-Based Material/ Name of startup** | **Remanufacturing / Name of startup** | **Block chain / Name of startup** | **Repair / Name of startup** |
| **1. WAIR -** A Dutch startup produces sneakers from textile waste.<br><br>**2. SEaB Energy-** a British startup offers waste-to Energy solutions. | **1. Excess Materials Exchange –** A Danish startup offers online market for reuse.<br>**2. VYTAL-** A German startup produces reusable food packaging. | 1. **Recytrust –** A Greek startup offers IOT based digital weight scale for recycling bins.<br>**2. Ishitva Robotics Systems –** An Indian startup offers IOT based smart waste bin that automatically segregates wastes. | **1. Recycleye-** A British startup provides waste management solutions based on AI.<br><br>**2. Lixo-** A French startup that offers software and hardware tools for waste management. | **1. Teysha Technologies-** A British startup that produces sustainable polymers.<br><br>**2. MOGU –** An Italian startup that develops interior designs from fungal mycelium. | **1. Circular Computing-** A UK startup remanufactures laptops to the standard of BS8887<br><br>**2. Resolute Industrial-** An American startup that remanufactures compressors. | **1. Circularise-** A Danish startup develops solutions for tracing materials with block chain across supply chains.<br><br>**2. Nature-Coin-** A startup of Canada that offers rewards systems through block chain. | **1. FixFirst-** A German startup which digitizes maintenance and repairing services.<br><br>**2. Veras-** A Dutch startup that offers repair stations for clothes or garments. |

## CONCLUSION AND SUGGESTIONS

The circular business is still in its early age and requires immense support from the business communities to establish and enforce it in a proper manner. The linear business prototypes have provided wastes like plastic that have caused enormous loss to the earth's environment and encouraged climate change. It is depicted through this investigation that circular trade can prove to be quite fruitful to the global ecosystem due to its sustainable nature towards humans and the global ecological arena. The global nations that shall adopt circular business on a larger scale shall safeguard their non renewable resources and shall also be energy efficient. Through this investigation it is being inferred that circular trade can only be successful through the combined efforts of politicians, stakeholders, environmentalists and entrepreneurs. The excessive damage to the global ecosystem through the current business models cannot be overlooked. It is vital to change the global trading mood to promote the sustainable circular business models that can be useful in restoring the global ecosystem. The current research is of the view that in order to achieve circular business the concept of five steps should be followed that include, clear goal, examine circular approach, keep recycling of materials and products active, monitoring supply chains and reviewing.

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