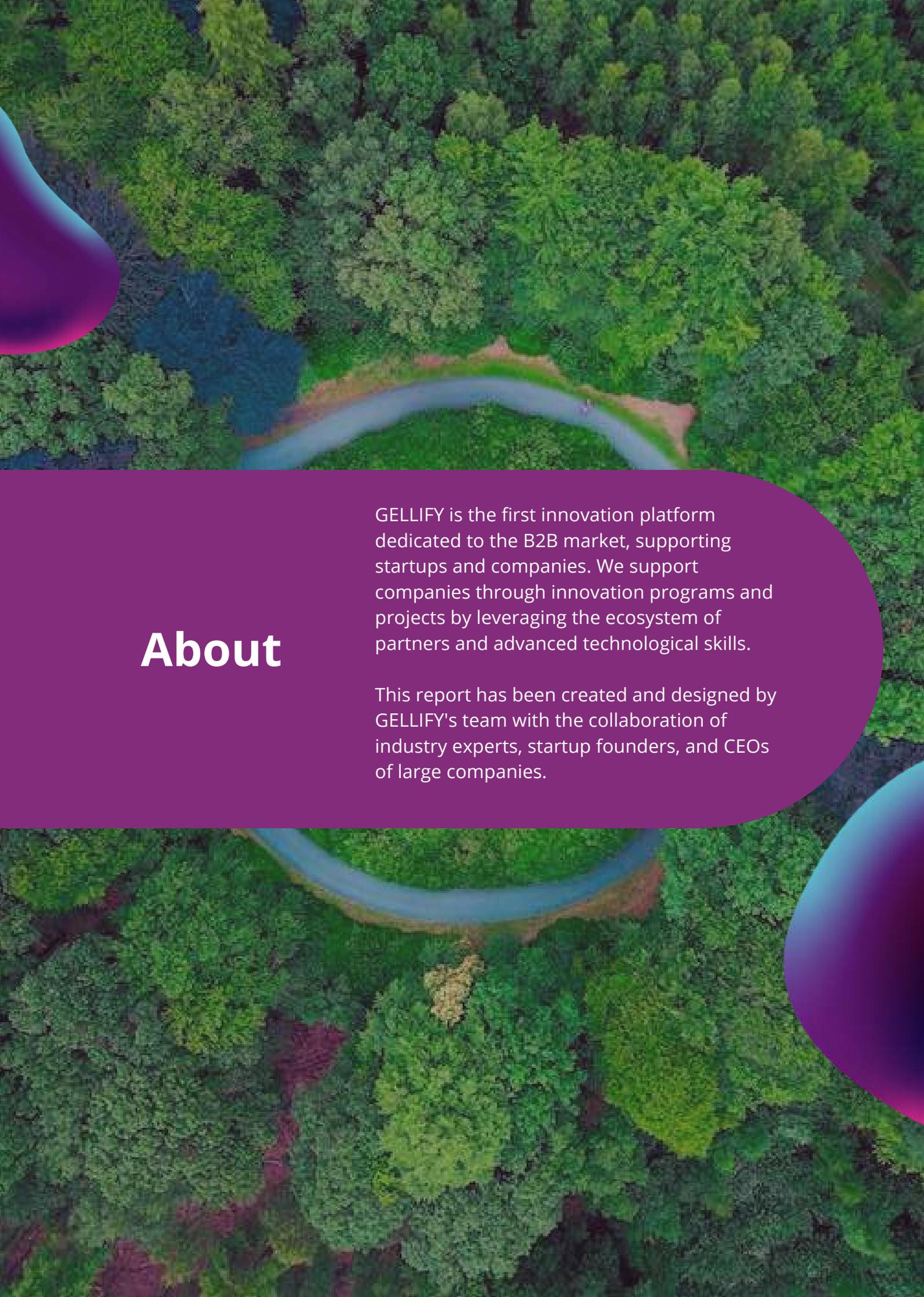




COMPANIES & STARTUPS DRIVING INNOVATION IN THE CIRCULAR ECONOMY

REPORT BY GELLIFY



About

GELLIFY is the first innovation platform dedicated to the B2B market, supporting startups and companies. We support companies through innovation programs and projects by leveraging the ecosystem of partners and advanced technological skills.

This report has been created and designed by GELLIFY's team with the collaboration of industry experts, startup founders, and CEOs of large companies.

Main Collaborators



Diego Fernandez
Co-Founder & CEO
@GELLIFY



Ana Benavent
R+D+I Director
@SACYR Valoriza
Medioambiente



Veronica Kuchinow
Founder
@Símbiosy



Eric Suñol
Partner
@Inveniam Group



Virginia Ocio de la Fuente
Head of Circular Economy
@ENDESA



José María González
Sustanaibility &
Innovation Director
@Unibail Rodamco



Antonio Urdiales
Sustanaibility
Director
@COSENTINO



Maite Ardevol
Circular Economy &
Sustainability Lead
@ACCIÓ Government of
Catalonia



Ivana Odone
Environment Analyst
@Molinos Agro



Gemma Gutierrez
General Director
@Ogilvy



Alvaro Fernández
BforPlanet Director
@Fira Barcelona



Daniel Santa Cruz
Innovation Director
@Ocean Winds



Alejandro Pardo Perez
General Director of
Corporate Services and
Venture Capital
@Sorigué



Félix González Yagüe
Strategy & CEO Office Director
@ACCIONA

Main Collaborators



Sergio Prendoné
CEO & Founder
@BeBord



Miguel Ratto
Advisory Board
@BeBord



Jorge Ceballos
Advisory Board
@BeBord



Yolanda Fernandez
RSC Director
@Alcampo



Stephenie Aumann
Marketing Director
@Enerbrain



Maria José Amores
Project Manager in
Circular Economy
@Cetaqua



Cristian Ull Molina
Head of Innovation
@Logifruit



Andrés Rodríguez
Sustainability Manager
@ENCE



Ugo Valenti
City Expo World
Congress Director
@Fira Barcelona



Cristina Nadal
Sustainability Specialist
@Unilever



Madalena Rugeroni
Country Manager Iberia
@Too Good To Go



Ester Esgueva Hombrados
EHS Manager
@Corbion



Alejandro Peris
Sustainability Director
@ARCOR



Patricio Navarro
ESH Manager
@Molinos Agro

Brands participating in the report

sacyr

suez
environnement

Unilever

endesa

COSENTINO

acciona

OW
OCEAN WINDS

UNIBAIL
RODAMCO
WESTFIELD

Corbion

MOLINOS agro
GRUPO PEREZ COMPANC

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Símbiosy

inveniam
Opening up technology pathways

Fira Barcelona

ACCIÓ
Generalitat
de Catalunya

CETAQUA
CENTRE TECNOLÒGIC DE L'AIGUA

Ogilvy

Alcampo

ence
ENERGÍA & CELULOSA

LOGIFRUIT

ARCOR

BeBord

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enerbrain

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MOVING TOWARDS A CIRCULAR ECONOMY

The circular economy is **fast emerging globally**. Companies and governments are increasingly recognizing its potential to tackle the root causes of climate change and other global challenges while generating new and better growth opportunities. As a solution that can scale fast, its relevance has only become more apparent in recent discussions about economic renewal.

Over the past two years, **climate change** and other environmental, social, and governance (ESG) issues have become key boardroom topics for asset managers, banks, and other financial services firms.

The circular economy can help meet global climate targets by **transforming the way we produce** and use goods. Moving towards a more circular economy could deliver benefits such as reducing pressure on the environment, improving the security of the supply of raw materials, increasing competitiveness, stimulating innovation, boosting economic growth (an additional 0.5% of gross domestic product), and creating jobs (700,000 jobs in the EU alone by 2030). Consumers will also be provided with more durable and innovative products that will increase the quality of life and save them money in the long term.



TOWARDS A SUSTAINABLE FUTURE

The circular economy (CE) concept has garnered increased attention in the last years, but what does this concept mean? There are many schools and institutions that have already tackled this concept. For example:

- 1 According to the **Ellen MacArthur Foundation**, a circular economy is an economic system that aims to redefine the linear traditional industrial model (take-make-waste) into a circular system that builds long-term resilience.
- 2 For the **European Parliament**, the CE is a model of production and consumption which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible.
- 3 The **UN** considers the CE as a new way of creating value, and ultimately prosperity, through extending product lifespans and relocating the waste from the end of the supply chain to the beginning.

There is an increased concern about **resource availability**, **price volatility**, **pollution**, and **sustainability** because supplies are finite—especially since EU countries (mainly) are dependent on other countries for their raw materials.

Many **sustainable projects** around the world already address various building blocks of CE. Some of them support resource-efficient and cleaner manufacturing; others focus on creating safe, easy-to-recycle products with longer lifetimes; and still others deal with the recovery or safe disposal of resources at the end of a product's life.

The EU and institutions such as the UN are requiring the adoption of a circular economy that will lead to higher resource efficiency and less waste. The circular concept fosters wealth and employment generation against the **backdrop of resource constraints**. Circular business models offer advantages such as the pathway for both large and small organizations to identify, capture, and retain additional revenues or reduce costs while meeting customers' demands in new ways.

On one hand, there are more and more **legal impositions** to comply with green policies and environmental standards; but on the other hand, the European Commission is committed to providing **incentives** and supporting the transition towards circularity.

MAPPING THE BENEFITS

1

Profit opportunities: Businesses could lower costs and create new profit streams through circular economy strategies.

2

Cost reduction: By redesigning business models, production processes, and products, circular businesses can significantly reduce their material, energy, and waste management costs, resulting in higher yields and competitive advantages.

3

New demand for business services: The rapid advance of the sharing economy, where the core premise is to extract value from existing assets rather than produce new products, is one of the several examples of these new business models.

4

Customer Engagement: New business models, such as rentals or leasing contracts, establish long-term relationships as the number of touchpoints increases over the lifetime of a product.



CIRCULAR ECONOMY IN THE CONTEXT OF COVID-19 CRISIS

According to The **Circularity Gap Report**, by 2019, the world's economy was only 9% circular, which means that just 9% of the 92.8 billion tonnes of minerals, fossil fuels, metals, and biomasses that enter the economy are reused annually.

By 2020, the global economy is 8.6% circular, even worse than two years ago. What are the reasons for this decrease? The following three negative trends:

1

High rates of extraction

While 26.7 billion tonnes of materials were extracted in 1970, 92 billion tonnes were extracted in 2017.

2

Ongoing stock build-up: This occurs because of urbanization and the increasing need for housing and infrastructures (hence services such as energy, water, sanitation, communication, and mobility). 52.6 billion tonnes are used in short-lived products, and 48 billion tonnes of products that last come mainly in the form of buildings, infrastructure, and capital equipment.

3

Low levels of end-of-use processing and cycling, as well as the poor design of products: Despite the increased recovery rates in some countries (e.g., Austria, Luxembourg, and Sweden, with rates above 80%), these improvements in waste management are being overtaken by the sheer volume of virgin materials being sourced and used to fuel our growth. Therefore, the yield of secondary materials is not enough to feed our economy.

The activities that most contribute to this **negative circular rate** in terms of resource use are the housing and infrastructure, nutrition, services, and healthcare industries. And now we must add to this rate the use of masks, gloves, glasses, plastic-packaged products (to ensure sanitation standards), and so on, in the fight against Covid-19.

Regarding these harmful activities, research powered by the Ellen MacArthur Foundation highlights that just by adopting CE principles in **steel, cement, aluminum, plastics, and food areas**, we could achieve a reduction totaling 9.3 billion tonnes of CO₂ in 2050. We could see this concretely carried out in activities such as the design (for durability), remanufacturing, and reusing of products and components, recycling, and implementation of new regenerative cropland approaches.

A CRITICAL ANALYSIS OF THE IMPACTS OF COVID-19

Every time that a disruption occurs—such as natural disasters and both economic and political crises, among other black swan events—the linear system collapses, making local business unsustainable. This **pandemic** has not been the exception to this rule; it has shown the limits of a fully globalized economy (i.e., supply chain models).

The **Covid-19 effect** has brought serious consequences, both human and economic. In fact, some institutions see several similarities with the climate crisis. These are "global negative externalities" because they create problems that markets cannot handle on their own. The circular economy model has proven its effectiveness against global risks. The Covid-19 crisis represents an opportunity to build a resilient and low-carbon economic recovery that will restore economic growth and the environment. For instance, in June 2020, more chief executives and global leaders endorsed the circular economy as a solution to build back better after the pandemic.

BARRIERS TO A CIRCULAR ECONOMY: 5 REASONS

- 1** **Lack of transparency** in processes, supply chains, streams, etc., which means poor data and metrics availability that could be enabled with the right technology and innovation.
- 2** **Scarce availability** of natural resources and economic dependence on material-intensive industries.
- 3** **Cultural mindset:** Resistance to change in some public and private organizations to embrace a "circular thinking" approach, as well as a lack of consumer interest and awareness.
- 4** **New skills** in terms of design and technological applications, recycling and repair, engineering, etc., are required for the workforce.
- 5** **The Covid-19 outbreak:** It has become a new form of pollution due to single-use personal protective equipment (PPE), the fact that recycling programs have been paused, and the fact that packaging waste from deliveries is on the rise because of the quarantine lockdown.

ACHIEVING A CIRCULAR ECONOMY WITH CORPORATE-STARTUP PARTNERSHIPS



Diego Fernandez
CEO
@GELLIFY Iberia

The massive scale of the **Covid-19 crisis**, the specific challenges arising from the circular economy in the challenge of moving towards a more sustainable society, and the complexity of developing a deep tech project are just a few examples of how the level of complexity of problems is on the rise.

In this context, the **exchange of knowledge** and resources brought by the cross-innovation approach helps to enhance a company's competencies by increasing its capability to face complex challenges. Collaboration with external partners can help overcome barriers that prevent a company from carrying out its innovation activities, including operational barriers, financial risks, regulatory barriers, and a lack of technical skills or knowledge about the specific area of interest.

Collaborative innovation is a process that brings organizations together over a shared question. It creates the space for them to explore how thinking of people differently and involving them fully can strengthen organizations—and indeed, sectors—as a whole.

MEET OUR CROSS-INNOVATION CHALLENGE

Working with **different organizations** from different sectors can help you overcome common problems in the same value chain. A **cross-innovation challenge** is a program designed by GELLIFY to help our clients cross innovate. We can assist in finding, assessing complementarity with, and engaging with the right partner organizations in order to define common challenges and coordinate projects towards a sustainable goal.

Moreover, we provide value-added services such as smart investments and top-notch technological capacities through our assets portfolio and players in our network.



INDUSTRIAL SYMBIOSIS: BUSINESS OPPORTUNITIES WITH WASTED RESOURCES THROUGH COLLABORATION



Veronica Kuchinow
Founder
@SIMBIOSY

Industry is one of the main pillars of Europe's economy. But our industry is energy- and resource-intensive, with significant carbon emissions and a high dependence on resource availability. This not only puts a strain on our planet's resources, but also contributes to climate change.

Industrial symbiosis encourages industries to work together and exchange material, water, and energy streams between companies, which increases resilience and economic gains while reducing the environmental impact and expenses.

A systemic approach is needed to address this. We need to view manufacturing processes as part of a larger picture, taking into consideration the industrial ecosystem and its resource management with an intersectoral approach: industrial-urban symbiosis in close collaboration with public authorities and society.

WORKING TOGETHER IS SMART BUSINESS

Facilitation between companies and stakeholders is a key concept to make all these things happen! And it is essential to together collect data of the resources we use and waste, utilizing technology developments while overcoming cultural barriers.

THE CIRCULAR ECONOMY AND CLIMATE CHANGE ARE THE INNOVATION OPPORTUNITIES FOR THE NEXT DECADE



Maite Ardevol
Circular Economy &
Sustainability Lead
@ACCIÓ



The Covid-19 pandemic has accelerated many trends, including two that are now emerging as major drivers of economic recovery: digitalization and sustainability. This new binomial focuses on the priority of the European Commission through the European Green Deal and also the Next Generation EU funds for economic reactivation, and it provides a clear view of where business transformation should point.

The **European Green Deal** will mobilize about 1,000 million euros for sustainable investments for the next 10 years. The Horizon Europe, a program for collaborative innovation in Europe that allocates 35% of its total budget for climate emergencies and ecological transition, will provide a 30% increase in funds over the previous version of this program. The circular economy is included as a priority vector of innovation in this new framework. The transition to a circular economy in industrial systems can contribute 45% to emission reduction targets and climate neutrality; 55% of the remaining emissions needs to be tackled through the energy model, transport systems, and construction.

The European innovation agenda for the next 10 years incorporates the **circular economy** into many of the innovation challenges that pose for industry, energy, transport, and food systems as the effective way to achieve zero pollution and a toxic-free environment. These innovation opportunities range from the inclusion of the resource circularity in industry, including CO₂/CO, to the integration of renewables in their processes, together with circular, low carbon, and more sustainable materials. Also, in the field of energy and transport, green hydrogen, as well as the European value chain for batteries—including their reuse and recycling circularity—is present. And in food systems, bio-based and regenerative systems, water circularity, and soil remediation are also addressed.

FROM A LINEAR TO A CIRCULAR ECONOMY: A NECESSARY CHANGE



Miguel Ratto
Advisory Board
@BEBORD

The vast majority of us grew up and functioned in the **classic linear economy**, where natural resources are extracted, processed, and transformed into goods and services that are consumed and then discarded. But currently, the idiosyncrasy of the new generations, the indisputable climate change crisis, and recently, the COVID-19 pandemic make us seriously question this purely economic convenience.

In this context, the conception of the circular economy proposes a holistic vision of the use of resources that, to capitalize on its advantages, must be considered throughout the life cycle of the product or service and involve all the parties concerned in this uncertain moment of a paradigm shift. Technology allows us to think more holistically, linking data, concepts, and participants to discover opportunities in different areas, which in the case of the circular economy are enhanced with the application of concepts from Industry 4.0.



Jorge Ceballos
Advisory Board
@BEBORD

THE CIRCULAR ECONOMY REQUIRES CULTURAL CHANGE

This requires an important cultural change from companies since it is a process that will demand time, innovation, development, human, technological, and financial resources, plans, monitoring, and management indicators, but above all, it will need a strong decision and conviction of all the members of an organization.

Regardless of the motivations that lead companies in this direction, it is necessary to understand that in the coming years, it will be a necessary condition to be able to perform competitively in the market due to the “obligation” that consumers will impose.



RETHINKING PROGRESS: CIRCULAR COMMUNICATION



Gemma Gutiérrez
General Director
@Ogilvy
Barcelona

Stories are not just made up of fantasy. A narrative is not exclusively dedicated to giving an account of past events. The true energy they treasure is **transformative**; stories are capable of generating new realities. They tell us about what it can become, not just what it is. They show us new horizons, goals, paths.

From this point of view, the **circular economy** also begins and develops in a narrative—an economic narrative that will bring us closer to the results we want to obtain. But first, we need to tell it ourselves. To our organizations. To our employees, collaborators and shareholders, if applicable. And, of course, communicate it to society. So, the story not only lags behind reality, but also generates it. Communication should do the same. A communication that begins with ourselves—really—with all its weight and with all its possibilities. The communication of a company cannot go on one side, with corporate social responsibility on the other. And the same with our internal, commercial, and external communication and the purpose, the cause, and the activism that we could come to understand how to put that story into action.

Communication must be aligned with the purpose, and this must be real. We have left behind the era of brainwashing; the circular economy pushes us to make deep, real, and impactful changes—which are closely watched by our clients and users—and that is why everything has to be aligned and has to respond to a strategy that has to come from above, from the agendas of the companies, and that has to be applied to real events.

Companies can only be part of the solution if they follow the steps outlined above regarding committing to and communicating the benefits of the circular economy. In conclusion, **changing lines for circles**.



CIRCULAR ECONOMY ECOSYSTEMS: PROMOTING THE CIRCULAR MODEL TO VISITORS NATIONWIDE



Ugo Valenti
City Expo World
Congress Director
@Fira Barcelona

From Fira de Barcelona, we envision a new era where all communities worldwide function through a **circular model**, leading to the end of an age of waste. The present evolution from a linear to a circular economy is inevitable because the abundance of resources we have enjoyed until now is coming to an end. To **escape future scarcity**, we need to intensify not only recycling and reusing materials and substances, as well as the sharing of commodities, but also the production of affordable and sufficiently renewable energy and freshwater. Overall, we envision a circular economy and the low-carbon economy as enablers when moving towards a genuinely sustainable economy.



Alvaro Fernández
BforPlanet
Director
@Fira Barcelona

The **Circular Economy Hotspot Catalonia** promotes a new model through the exchange of ideas and experiences between policymakers, entrepreneurs, researchers, and industrialists. It aims to highlight circular economy real practices. Circular design, the bio economy, Industry 4.0, and inclusive circularity are among the themes of the four-day event.

Closer in the calendar, **BforPlanet** is defined as an international get-together of business and public leaders, joining forces to create a better, more sustainable world. With congress sessions, networking, and more, it aims to forge partnerships, advance the SDGs in a profitable manner, and find solutions to the challenges facing humanity. The goal of both projects is unique and unequivocal: to accelerate the creation of solutions that enable communities and the planet to thrive.



THE IMPACT OF COMPANIES AND STARTUPS IN CIRCULAR PROJECTS BY SECTOR



At GELLIFY we believe that the circular economy and innovation must be **collaborative**. For this reason, we have designed and created this report to help corporations, startups, research centers, and universities to collaborate on new circular economy projects. We have interviewed +30 companies from **six different sectors** (Energy, Food, FMCG, Retail, Industry 4.0 and Construction) to explain different circular economy projects and assess possible collaborations between companies.

1. SMART INDUSTRY FOR CIRCULAR ECONOMY

Today's connected/smart industry solutions allow companies to easily **monitor, optimize, and improve** their production processes. Industrial Internet of Things (IIoT) devices such as sensors and connected systems provide decision-makers with new sets of data, offering new insights on KPIs, primary products, by-products, and waste management. By taking advantage of these tools, companies can increase their competitiveness along their entire value chain, ultimately leading to higher profits—all while helping the environment.

As explained by the **Ellen MacArthur Foundation**, IoT and smart devices in industrial settings help companies unlock the circular economy potential thanks to the knowledge of the location, condition, and availability of each asset. Having an overview of this data in real time is of immense value to businesses. For instance, knowing the location of an asset allows for optimized routes for loading/unloading, maintenance, and storage of spares. Knowing the condition of an asset can lead to high uptime as it allows for predictive maintenance instead of routine interventions. Thirdly, knowing the availability of an asset helps companies to optimize energy and other resources like raw materials based on usage patterns.



KEY ENVIRONMENTAL ISSUES

In business today, the emergence of Industry 4.0 for production and its related technologies—such as the Internet of Things (IoT) and cyber-physical systems, among others—have, however, a negative impact on environmental sustainability as a result of air pollution, the poor discharge of waste, and the intensive use of raw materials, information, and energy.



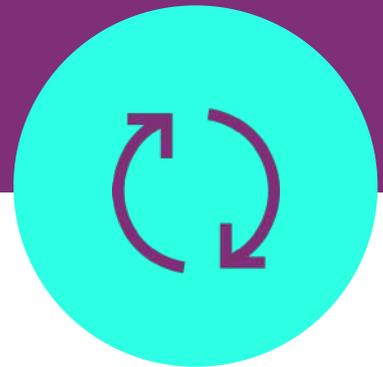
NEW CONSUMPTION TRENDS

Improvements in Artificial Intelligence (AI)

Automation and AI working in factory settings will be responsible for improving the quality of responses to demands for new products in the future.

Consumers Will Be More Connected to the Experience.

The new methods of tracking data and consumer experiences are helping to inform the manufacturing process.



KEY CIRCULAR ECONOMY STRATEGIES

Waste elimination from manufacturing processes.

Creating a **closed-loop** production cycle to reuse non-degradable materials.

Re-manufacturing solutions for products and components.

New technologies applications like 3D printing and electric engines.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN INDUSTRY 4.0: @SACYR



Ana Benavent
R+D+I Director
@Valoriza
Mediambiente

valoriza medioambiente
Una Compañía de Sacyr Services

sacyr

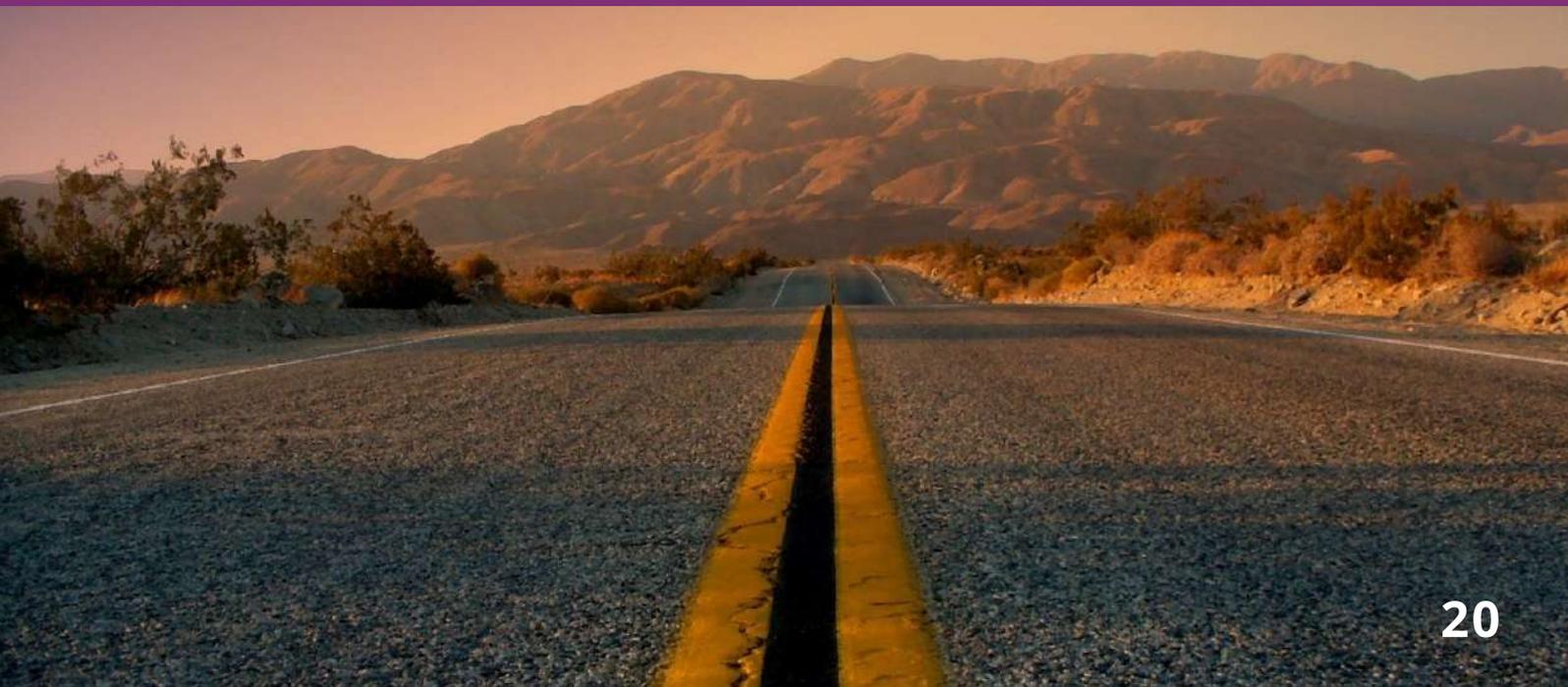
Use. Recycle. Reuse. This is how simply we could describe this concept that has appeared in our lives in the last few years and which is already part of the strategic pillar of SACYR.

Our group has incorporated the circular economy into its industrial production model to achieve sustainable growth. It is a transversal model present in all our areas of activity, as defined by our corporate director of quality and environment, Encarna Mateos.

At Valoriza Medioambiente—whose core business is waste management—we are convinced that our strategy is already part of this concept as a basis for each of our projects.

One of our most unique programs is **RARx**, which consists of reusing end-of-life tires to make asphalt for roads through a transformation process that converts it into tire powder together with bitumen and other additives of mineral origin.

In addition, we promote the circular economy in our machinery fleet in Spain and in our material purchasing policy, where we select the most environmentally-friendly materials and promote their revaluation, as well as the minimization of waste and food waste. Fifty-seven percent of the material consumed during 2019 corresponds to recycled materials.



THE CIRCULAR ECONOMY: A TRANSVERSAL AND ESSENTIAL BUSINESS MODEL AT SACYR

On the other hand, from our **Surge Ambiental** division at the construction and demolition waste (CDW) treatment plant in Alcalá de Henares (Madrid), recycled aggregates are treated for new uses

In addition, we have another project called **Insight** to detect non-ferrous metals contained in the slag from an incinerator. We are currently researching a system to be able to distinguish which of these slags contain non-ferrous metal that can be recovered, thereby also reducing the material deposited in landfills.

We also use the residual organic matter to create biogas with our **Microuwas project** through a process called bio **mechanization**. Through this process, Valoriza increases the biogas production flow and its quality and reduces the amount of waste that goes to landfills by reducing its biological and chemical reactivity, thus making it more inert.



A novel and original project that we carried out together with the startup **@Recircula Solutions** has turned recycling into a direct reward for citizens. Through sensors in garbage containers, the trash that enters each container is registered, and the consumer receives points to spend in local businesses through an app.

One of our latest actions in the circular economy is our challenge to the innovative ecosystem, launched together with **Madrid Innovation Driven Ecosystem** (MIDE), to certify the recycled origin of materials to incorporate them into the value chain.

HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN THE INDUSTRY 4.0



Resource depletion and **climate change** are pushing the energy market to reinvent itself. The **Covid-19 crisis** has also exposed the need for change in many sectors, from manufacturing to smart city applications. Meanwhile, new opportunities for innovation are emerging in areas such as energy efficiency, smart grids, and clean energy. Startups play a crucial role in the development of solutions to address energy-related issues.

Within this scouting, we have explored various trends in **Industry 4.0**. More specifically, we have focused our study on how circular design, new materials, sustainable manufacturing, remanufacturing, and sustainable sourcing solutions are accelerating the industry in shifting to a more sustainable future.

We have to highlight two interesting startups: **@Redwood Materials**, which is developing sustainable materials to give a second life to the EV batteries, and **@Sunthetics**, a startup that accelerates sustainable innovation in the chemical industry.



Alexis Georgeson
Head of Communication
@Redwood Materials

Climate change is a global problem that demands innovative solutions now. Our industrial revolution led to pollution and mountains of waste. And we know that inventing circular supply chains, turning waste into profit, and solving the environmental impacts of new products before they happen will save our planet.

We have invented and proliferated electronic devices to every corner of the globe and lifted billions of people out of poverty and into the information age. As these trends grow and mature, we at Redwood are planning ahead to address the problems and opportunities coming when millions of EVs batteries need an end-of-life solution and when the electronics piled up in your drawers at home find a new life.



Myriam Sbeiti
CEO & Founder
@Sunthetics

Currently, Sunthetics is developing software to accelerate and improve the development of new chemicals. Our product enables chemists to develop reactions 3-5x faster while reaching better overall results. This leads to large reductions in resource consumption, energy use, and waste production from the accelerated timeline and improved results. In addition, one of the main applications of our technology has been to accelerate the implementation of a particularly complex reaction type called electrochemistry. This type of reaction uses electrons to transform chemicals, enabling the electrification of the chemical industry and the integration of renewable energies for a more circular economy.



2. APPLYING THE CIRCULAR ECONOMY TO THE ENERGY & WATER INDUSTRY

Companies in the **energy and water management** industry have the potential to play a huge role in the development of a circular economy. Many of the technological developments that could **accelerate circularity** are within their sphere of operations. These include innovations in materials composition and efficiency, electrification, hydrogen production, biochemistry, synthetic chemistry, and carbon capture and use.

Shifting to a circular economy will not be easy, but the evidence tells us it is increasingly critical for a **sustainable future**. Companies that launch circular economy initiatives may encounter many legal, financial, organizational, and operational barriers. Solutions often require the collaboration of different parties and typically need knowledge across a wide range of domains. Energy and resource companies that lead the way can play their part in accelerating this energy transition and find new opportunities to create long-term value.



KEY ENVIRONMENTAL ISSUES

Energy is still produced based on fossil fuels: coal, oil, and natural gas.

High emission levels: greenhouse gas (GHG), carbon, etc.

Global warming and climate change concerns about this sector.

Resources scarcity: oil, carbon, and natural gas,

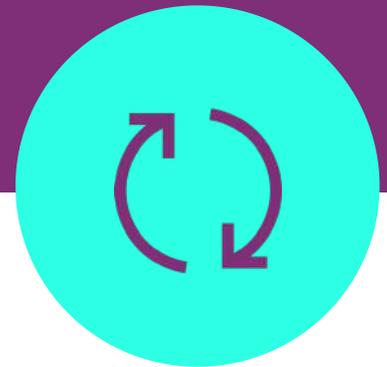


NEW CONSUMPTION TRENDS

Consumer interest in green energy sources.

Regulation on emissions: Horizon 2020, the Paris Agreement, SDGs, and many more.

Energy transition: into renewable sources.



KEY CIRCULAR ECONOMY STRATEGIES

New business models & servitization: demand response, Energy-as-a-Service, smart grids, etc.

Green energy generation: renewable, waste-to-energy, fuel conversion, and recycling materials from energy production plants.

Energy storage: usage of eco-friendly batteries.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE ENERGY INDUSTRY: @ENDESA



Virginia Ocio de la Fuente
Head of Circular Economy
@ENDESA

endesa

Combating climate change and transforming the energy system are core challenges on the path to a sustainable future for business, society, and the environment. The Paris Agreement has sent a decisive and global signal that the start of the transition to a thriving, clean economy is inevitable, irreversible, and irresistible.

On the road to this **sustainable future**, our vision is that decarbonization and circular economy must go together. They both represent complementary strategies to achieve a common goal, a decarbonized economy. On the one hand, we pursue the decarbonization of our generation mix and the electrification of energy demand with renewable energy at all levels but specifically in buildings and transportation to achieve a new emission-free energy model. But at the same time, we are committing our efforts to implement the principles of circular economy in our value chain. This new approach is based on the use of sustainable resources (renewable, reusable and recyclable), optimizing the useful life of goods and products and finding new uses for assets, waste and byproducts at the end of their life cycle. Through collaboration and through working together with our suppliers and partners through the value chain, we are finding we can make the shift to the circular economy.

In addition, a **circular economy** represents a significant opportunity to help tackle global challenges such as the climate crisis, biodiversity loss, and land degradation. A circular economy will create direct economic benefits and new opportunities for businesses and households. Those that embrace the idea and shift to a circular economy will have the edge over their competitors achieving competitiveness and in building long-term value.

A CIRCULAR ECONOMY PLAN TO BOOST ENERGY TRANSITION IN EUROPE

In our strategic plan up to 2023 “decarbonisation is at the center of our strategy, with 94% of the planned investment for 2021-2030 dedicated to the fight against climate change. During 2020, ENDESA's investments in environmental activities have represented a 3.3% increase in accumulated investments compared to 2019, reaching an accumulated investment of 1,897 million euros. In just 4 years since the Paris Agreement, Endesa has almost come halfway towards the goal set in 2050, reducing its emissions by 48%.

We are applying the circular economy to the decommissioning of our coal plants to prioritize the search for a second life for the equipment and materials and to reduce waste generation as much as possible. In order to mitigate the social and economic impact caused by the shutdown of these plants, we are carrying out Futur-e plans in the surrounding areas of the plants. The aim of these plans is to create shared value with all the local stakeholders affected and to apply the criteria of the circular economy so as to bring in new business models that will work in these different areas.

As a final remark, it is important to emphasize that applying the principles of circular economy to the energy transition is key to guarantee the sustainability of the transition itself. A huge demand of materials is expected for deploying technologies and infrastructure for the energy transition. We must face this challenge as an opportunity to develop and implement a new circular economic model as a reference for the whole society.



ELECTRIC VEHICLE BATTERIES THAT CAN LIGHT UP A CITY

The energy storage system at our Melilla power plant is an award-winning project on account of its contribution to the circular economy based on the reuse of batteries from electric vehicles to guarantee the electricity supply of the entire city.

The investigation of new energy storage systems in the move towards a new decarbonized model has led us to test a pioneering system in Europe: the reuse of electric vehicle batteries to guarantee the security of the electricity supply in a system which is isolated from the electricity grid, as in the case of the autonomous city of Melilla.

This circular economy initiative has received the BASF award for the best circular economy practice in Spain. These awards recognize projects or research that are based on the circular economy and contribute to—or have the potential to contribute substantially to—the development of business competitiveness in this country, especially projects that have a social and environmental sustainability approach.

At Endesa, we are pioneers in the research and development of large-scale energy storage projects within our commitment to developing a no-emissions energy model. Our strategy focuses on growth in renewable energy, electrification of demand, energy efficiency, and the phasing out of traditional generation systems and energy storage systems.



HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE ENERGY INDUSTRY: @OCEAN WINDS



Daniel Santa Cruz
Innovation Director
@Ocean Winds



The energy industry comprises the petroleum, gas, electrical, coal, nuclear, and renewable energy sectors. In recent years, **renewable energy** has started taking precedence over non-renewable energy sources such as petroleum and coal. This is because of rising consumer awareness towards global warming and government initiatives to curb pollution.

The energy industry is facing a major challenge to allow other industries to become more circular: the electrification of the economy and especially of the industry itself. The energy industry must make a swift and orderly transition to **decarbonization**. The challenge is that it's very difficult to electrify a high portion of the electricity demand (approximately 16%). The difficulties are more visible in industries like chemicals, steel, or cement production. These industries typically use hydrogen as part of their production process, and this hydrogen is typically produced with CO₂-emitting methods. The good news is that we can now produce hydrogen from renewable electricity—the so-called **green hydrogen**. Hydrogen from renewables can be produced through various pathways, with the most established being the use of renewable electricity to split water into hydrogen and oxygen in an electrolyzer.

Another example of decarbonizing the industry with the help of renewable energy is the transportation industry, which must develop innovative alternatives to fossil fuels. This industry relies heavily on fossil fuels to help it successfully transport products from manufacturers to consumers via trucks or cargo vessels worldwide. As concerns about the longevity of fossil fuels grow, the search for a more sustainable fuel is intensifying. Hydrogen-based fuels or even fuel cell devices could play a paramount role here. Again, the hydrogen needed for powering this industry can now be easily sourced through renewable electricity.

increasing the supply of renewable energy would allow us to replace carbon-intensive energy sources and significantly reduce global warming emissions. Ocean Winds was created to make offshore wind one of the main sources of renewable energy by delivering more efficient and sustainable wind energy solutions. Offshore wind power is one of the most efficient technologies to produce energy in a safe and environmentally sustainable manner: It is zero emissions, local, inexhaustible, and competitive.

RENEWABLE ENERGY – THE PILLAR OF THE CIRCULAR ECONOMY

OW is a 50:50 offshore wind joint-venture, owned and created by **EDPR** and **ENGIE** in 2019. Both companies believe that offshore wind energy is becoming an essential part of the global energy transition, leading to the sector's rapid growth and increased competitiveness.

A truly circular economy demands a comprehensive approach to resource efficiency: one that not only addresses the use of raw materials, but also energy sources. Today, renewables like solar and wind energy are becoming increasingly viable alternatives to fossil fuels. To pave the way to a **sustainable future**, OW strives to continually improve its production processes and energy supply.

Offshore wind farms will generate enough electricity to power every home in the UK within a decade, Boris Johnson has pledged. This means we will play a crucial role in the next few years and on the road to the circular economy.

However, the raw materials we use in offshore wind farms to produce green energy must be recycled as well. For example, wind **turbine blades** are difficult to recycle today. We have to develop innovative solutions to make renewable energy production also circular. That's why we are involved in different projects to recycle and **give a second life** to the wind turbine blades.

ZEBRA PROJECT

To accelerate the **wind power industry's transition** to a circular economy for wind turbine blades, the **ZEBRA project** establishes a strategic consortium that represents the full value chain: from the development of materials, to blade manufacturing, to wind turbine operation and decommissioning, and finally, to recycling the decommissioned blade material.

Within the ZEBRA project, LM Wind Power will design the product, process, and manufacture two prototype blades. In parallel, the ZEBRA project partners will focus on developing and optimizing the manufacturing process by using automation, to reduce energy consumption and waste from production.



HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE ENERGY INDUSTRY: @ENCE



Andrés Rodríguez
Sustainability Manager
@ENCE



Ence has developed a business model based on the use of **renewable natural resources** for the generation of bioproducts and green energy. This model is articulated in three independent but complementary business lines: cellulose production, the generation of renewable energy with biomass, and sustainable forest management.

Forest land managed by Ence provides the raw material for the other two business lines and serves as a reference for the introduction of best practices in its supply chain—such as sustainable forest certification or silvicultural techniques—that enhance efficiency and productivity.

Secondly, the **cellulose business line** is constantly evolving to develop new generation bioproducts that respond to market trends like the replacement of petroleum-derived materials.

For its part, the **renewable energy line** takes advantage of Ence's decades of experience in forestry logistics to develop models for the use of agroforestry resources spread throughout the Spanish rural environment.

Thus, Ence contributes to the transition from a **linear consumption model to a circular economy**, since its production processes are based on renewable raw materials and reduce waste disposal in landfills as much as possible. Ence also promotes responsible consumption, since producing special cellulose offers alternatives to products, including plastics and other materials derived from oil.

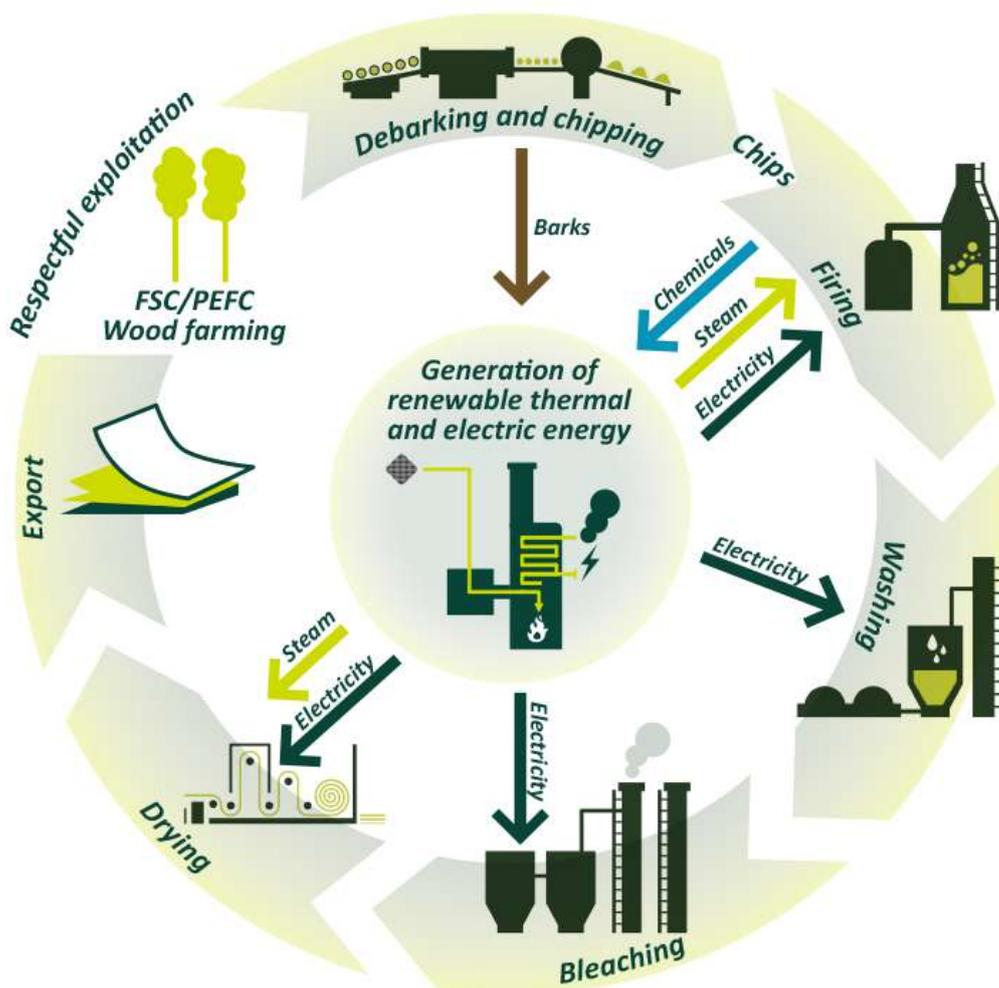
In addition, Ence contributes to **circularizing other value chains** in the agricultural sector, taking advantage of plant remains from crops to generate energy and reducing the environmental impacts derived from their uncontrolled elimination, such as diffusing emissions derived from burning in the field and reducing the risk of forest fires.

Ence also applies the principles of the circular economy in its production processes, betting on the prevention, minimization, and recovery of waste through strict operational control of its processes.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE ENERGY INDUSTRY: @ENCE

One of the main waste streams from Ence's power plants consists of the **ashes generated in the biomass combustion facilities**. These ashes contain a high concentration of soluble potassium, which makes them especially interesting as a substitute for commercial potash. Ence, aware of the value of this material, has been a pioneer in promoting its reuse and its value in the market.

Taking into account the conditions for the consideration of a byproduct established in the Waste Framework Directive and its transposition into the Spanish legal system (Law 22/2011, of July 28, on waste and contaminated soils), Ence has processed in the Ministry of Transition Ecological the files for the qualification as a byproduct of these ashes and has obtained a positive response for the ashes produced in the plants of La Loma, Lucena, and recently Huelva 46. Thanks to this, these ashes are now incorporated into the fertilizer manufacturing process. Ence has started this same procedure for the ashes of the rest of the plants, awaiting resolution by the Ministry.



HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE WATER INDUSTRY: @CETAQUA



Maria Jose Amores
Circular Economy
Project Manager
@Cetaqua



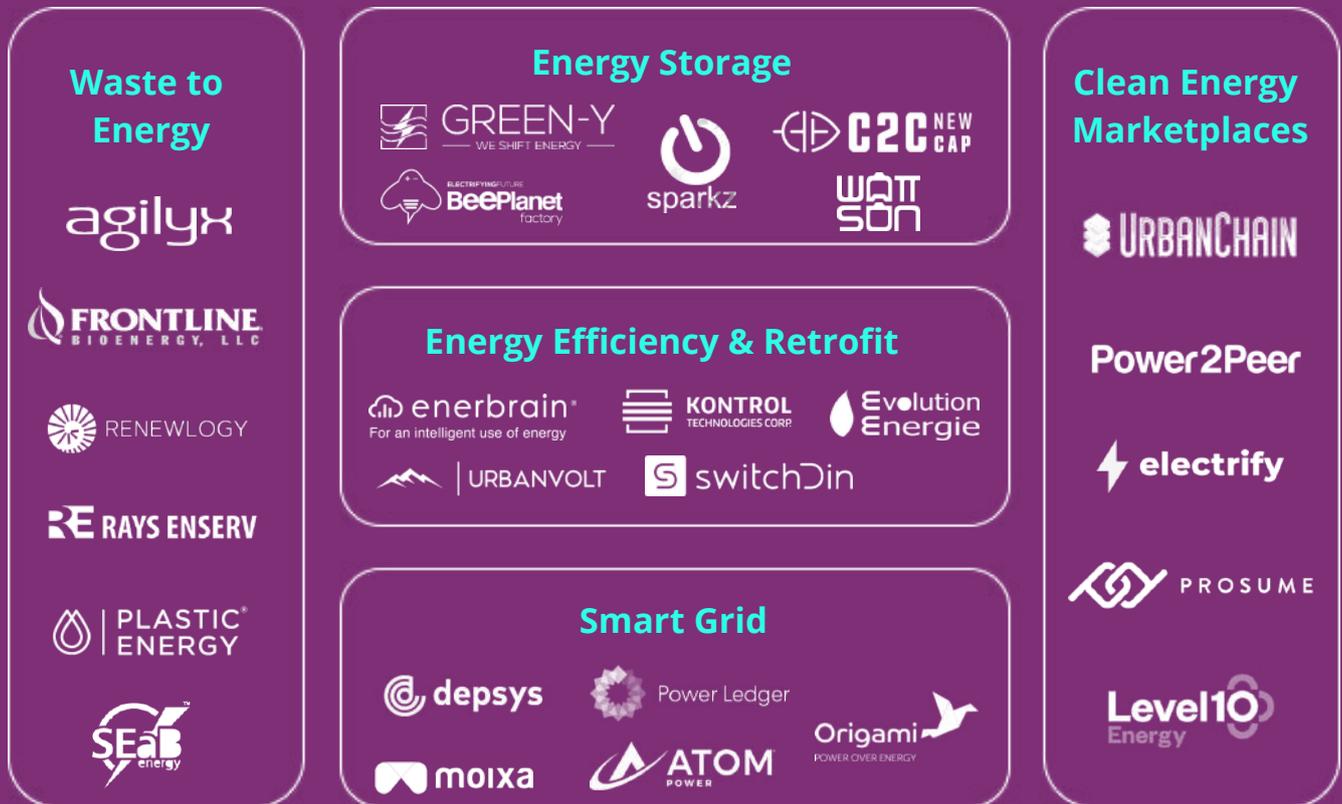
Achieving sustainable water management in cities and **circular water economies** requires the **collaboration** of all levels of society in the context of an innovative ecosystem. **Gavà City Council** (a municipality in the province of Barcelona in Spain), **Aigües de Barcelona** (the water utility), and **Cetaqua Barcelona** (Water Technology Research Centre) have collaborated in a sequence of two innovative public-private partnerships with the aim of first co-designing and then implementing a circular economy territorial model in **Gavà**. Taking water as the main flux in which to focus, the model proposes a holistic approach considering also energy and raw material/waste fluxes striving for environmental, economic, and social sustainability. This collaboration has also demonstrated novelty in funding, with economic resources being sourced by the three participating entities. It has also served as a basis for signing the principles of IWA's water-wise cities, being the first Spanish city to do so, and jointly developing the five building blocks for Gavà's city transformation into a **water-wise city**.

The most innovative results obtained include:

A **co-designed circular economy** territorial model for Gavà using active participation and consultation as a crucial point to achieve the required level of engagement with the municipality and territorial members. The innovative methodology is based on the analysis of water, energy, and materials input and output flows of different territorial parties, in this case 25: the city council, the utilities (water, energy, and waste), 15 different industries, the natural and agriculture areas, and other administrations with competencies at regional levels. It resulted in 10 circular economy opportunities for closing the resource loops and/or achieving resource efficiency, with an emphasis placed on treated wastewater reuse from the local wastewater treatment plant for industrial and urban uses as an alternative water supply source. Positive environmental, social, and economic impacts on the territory and its citizens were demonstrated as part of the technical and sustainability assessment of these opportunities, which led to the prioritization of circular economy projects.



HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN THE ENERGY INDUSTRY



Resource depletion and climate change are pushing the energy market to reinvent itself. The Covid-19 crisis has also exposed the need for change in many sectors, from manufacturing to smart city applications. Meanwhile, new opportunities for innovation are emerging in areas such as energy efficiency, smart grids, and clean energy. Startups play a crucial role in the development of solutions to address energy-related issues.

Within this scouting, we have explored various trends in the energy industry. More specifically, we have focused our study on how waste-to-energy, energy storage, energy efficiency, smart grids, and clean energy solutions are accelerating the industry in shifting to a more sustainable future.

We have to highlight two interesting startups, **@Enerbrain**, an Italian startup which develops energy retrofit solutions for large buildings that allow drastic cuts in consumption, and **@BeePlanet**, a startup that is giving a second life to EV batteries.



Stephanie Aumann
Marketing Director
@Enerbrain

The circular economy offers a virtuous economic and industrial model in which the development of businesses and territories is detached from the consumption of exhaustible natural resources, maintaining their value over time. What does this mean? For example, it could mean extending the life of products and increasing their performance and or efficiency, or removing waste from production, the supply chain, and recycling materials, or applying new technologies and using big data, controls, and automation systems. Enerbrain's solution helps existing buildings achieve energy efficiency and regain value from them



Jon Asin
Founder
@BeePlanet

At BeePlanet Factory, we repurpose electric vehicle batteries for stationary energy storage, giving them a second life. When EV batteries are reused for stationary storage, up to 75% of CO2 emissions are avoided when compared to using a new one. And, in addition, the cost of the storage system is lower, and the installation payback is maximized. Our batteries are suitable for home, commercial, and industrial sectors.

At the end of their second life, batteries are recycled. And critical raw materials such as lithium or cobalt are reused. Thanks to this approach, our batteries make virtually zero impact on the ecosystem.



3. THE CIRCULAR ECONOMY IN CONSTRUCTION IS NOT JUST POSSIBLE: IT IS NECESSARY

The pandemic has laid bare the entrenched shortcomings of the **built environment sector**, underscoring the prevalence of low-quality buildings, issues around the affordability of decent housing, and the lack of adaptability of our current building stock. These issues, coupled with the growing concern around the industry's highly wasteful and resource-intensive nature, present a strong impetus for the sector's transformation (Ellen Macarthur Foundation, 2020).

Renovating and **upgrading buildings** along circular principles to become more adaptable and comfortable while having a positive impact (i.e., being low-carbon) can provide solutions to some of these issues. Additionally, increasing the availability of building materials by reusing and recycling them into infrastructure would allow greater value circulation and the effective use of resources that, in turn, can lower the industry's burden on virgin resource consumption.



KEY ENVIRONMENTAL ISSUES

According to the World Economic Forum (2016), this sector is the single **largest consumer of resources** and is often regarded as one of the largest producers of waste, making it extremely important to ensure circular material flows.

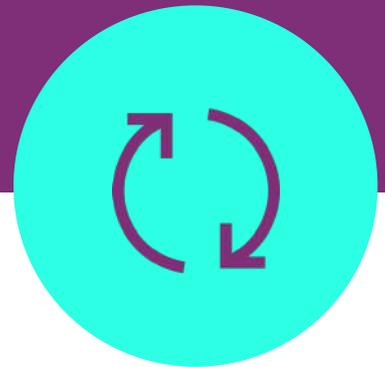
Construction waste goes to landfills due to over-ordering, ordering incorrectly, or damage due to poor storage.



NEW CONSUMPTION TRENDS

Demographic evolution across regions requires different and changing housing needs

Shifting working patterns require flexible spaces, accelerated by the Covid-19 crisis.



KEY CIRCULAR ECONOMY STRATEGIES

Create futures contracts in which value is tied to the estimated future value of materials in a building when it is deconstructed.

Complement the reuse of deconstruction materials by using materials that are renewable, non-toxic, have a high recycled content, and are sourced locally.

Pay for performance through product-as-a-service subscriptions for building fixtures and fittings.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE CONSTRUCTION INDUSTRY: @COSENTINO



Antonio Urdiales
Sustainability
Director
@COSENTINO



The **construction industry** is one of the world's largest consumers of energy and raw materials. This is taking its toll on the environment: In the EU, construction is responsible for around **40% of CO2 emissions** and nearly a third of all waste. But shifting from a linear to a circular economy would bring huge ecological improvements. Let's talk about the different challenges we will have to face to achieve a more sustainable industry.

It's time for construction to **embrace the circular economy**. The aim of this kind of economy is to minimize (or even eliminate) waste and pollution by improving efficiency and keeping products and materials in use. For construction, this encompasses everything from the design phase through building, usage, and eventually deconstruction and recycling.

One big challenge to achieve the circular economy is **decarbonization**. The building sector must decarbonize by decreasing energy intensity by at least 80% by 2030 and be climate neutral by 2050 to be compliant with the Paris Agreement goal of keeping global warming to 1.5°C above pre-industrial levels. This will require technological advances to test different solutions and accelerate the transition to decarbonization.

In fact, one of the big challenges we are facing is related to **digital skills**. Technology is transforming at a pace that will leave most companies spinning. Advances like artificial intelligence, machine learning, and big data continue to transform the way we communicate, work, market, and make decisions. We have created different courses to ensure that our employees have the skills required to innovative at the forefront of digital transformation.

Last but not least, another big challenge for us is **rural depopulation** as our main workforce is in the countryside. The rural exodus has been triggered in Europe since the early decades of the second half of the twentieth century. Many people, especially the younger members of society, continue to migrate to the cities looking for job opportunities, better facilities, and higher wages than in the countryside.

THE ULTIMATE MINERAL HYBRIQ SURFACE BY COSENTINO

With more than 30 years at the forefront of the world of surfaces for architecture and design, Silestone®—the Cosentino Group's benchmark brand—is renewing its corporate identity, symbolizing both an external and internal transformation.

This new visual identity is also in line with the new responsible and sustainable character of Silestone® thanks to the pioneering and exclusive **HybriQ® technology** developed by Cosentino. HybriQ® is a technological innovation that sets a new standard in the market of surfaces for architecture and design and changes the paradigm of the so-called quartz surface category. It involves two important changes:

1

HybriQ® technology includes Cosentino's own environmental milestones at the production level, such as the use of 99% reused water from production processes and 100% renewable energy.

2

HybriQ® uses a new hybrid formulation of **mineral raw materials** and materials of a **recycled origin**. In the HybriQ+® modality, the colors have a recycled or recovered raw material content of more than 20%. In addition, this technology makes it possible to reduce the use of crystalline silica in the composition of Silestone® by 50%, achieving a reduction of up to 90% for some colors.



With this new composition, Cosentino creates a Silestone® with the same mechanical and technical performance, which maintains all its quality and hygiene certifications, and with an appearance that retains its timeless beauty, while also providing new design possibilities.

Thanks to HybriQ®, the Cosentino Group reaffirms its leadership in the sector and paves the way for greater sustainability while contributing significantly to health and safety in the company's value chain, with a special focus on the people directly involved in the production process.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE CONSTRUCTION INDUSTRY: @ACCIONA



**Félix González
Yagüe**
Strategy & CEO
Office Director
@ACCIONA



We are a global group that develops and manages **sustainable infrastructure solutions**, especially in **renewable energy**. Our business spans the entire value chain, from design and construction through to operation and maintenance. Our goal is to lead the transition towards a **low-carbon economy**, bringing technical excellence and innovation to all of our projects to design a better planet. We are committed to contributing to the economic and social development of the communities in which we operate, and all these principles are considered in our sustainability strategy and in the circular economy solutions that we develop.

At ACCIONA, we have been developing **circular economy** approaches for more than 30 years, and we have now more than 20 active projects in the infrastructure business related to the circular economy.

ACCIONA has become the first infrastructure and renewable energy company to achieve the certification of its "Circular Economy Strategy" by **AENOR**. This certification ratifies the company's commitment to the circular economy, which is based on extending product life cycles, reducing natural resource and raw material consumption, and minimizing waste production.

The audit, carried out by AENOR, certified that ACCIONA applies circular economy criteria throughout its organization, as well as in its value and supply chain, which translates into specific initiatives aimed at recovering by-products in all its business areas.

Ecodesign and **industrial symbiosis** models for the use of secondary raw materials are the two main circular economy approaches used in our construction business for the development of innovative circular solutions.

SUSTAINABILITY IN BUILDING DESIGN AND CONSTRUCTION BY ACCIONA

One of our common innovative circular practices in our **construction business** is the use of alternative **hydraulic binders** from secondary raw materials for soil treatments and soil stabilization. Within this research topic, we have the example of the use of waste paper ash as a substitute for lime and cement for soil stabilization, with the validation of the technology in the construction of a highway in La Font de la Figuera (Valencia). We have built a soil cement layer of the road with 100% substitution of cement by waste paper per the framework of PaperChain project. ACCIONA coordinates this project, co-funded by the European Commission, with 20 partners from five different European countries.

The introduction of innovative solutions based on **industrial symbiosis** initiatives for the consecution of secondary raw materials is soil stabilization is a common practice in ACCIONA's sites across the world, and supports our commitment for providing regenerative infrastructures with positive impacts.

Our society is moving towards a circular economy model, and we consider it as a source for new business opportunities. Based on our innovation strategy and expertise, ACCIONA is paving the way for the generation of new products and services through **collaborations with startups**, partners, and clients.



SORIGUÉ INCREASES ITS CIRCULAR ECONOMY AND SUSTAINABILITY INNOVATION PROJECTS



Alex Perez Pardo
General Director
of Corporate
Services and
Venture Capital
@SORIGUÉ

sorigué

Sorigué is an industrial group founded in 1954 that focuses on the sectors of technology and water engineering, services, construction, and materials with a clear commitment to innovation and a vocation to return to society.

The group has managed to accredit **92% of its business** with the international standard of environmental management ISO 14001 and has reduced its total water consumption by **31%** and its greenhouse gas emissions by **6.34%**.

Sorigué is currently carrying out **10 research projects** focused on finding sustainable solutions. **Collaboration** with **startups** and **SMEs** allows us to improve agility and innovation efficiency, shortening the time from when an idea emerges until a new product or service is placed on the market, and to identify talent. As a result, we partnered up with **@Honext**, a startup that develops sustainable construction materials, and **@Eolos**, which provides turnkey resource-measuring campaigns exclusively for the offshore wind industry.



EOLOS offers a low-cost, accurate, and reliable offshore wind data source that enables the performance of measurements at heights over 200m above sea level and at much lower costs than conventional bottom-fixed offshore met masts. Moreover, it offers positional flexibility and can be reused in other areas within a wind farm site, potentially reducing the uncertainties of wind speed measurement.

EOLOS's competitive advantage relies on the precision, availability, and completeness of data acquisition as well as its sturdy and optimized structure, which is designed to withstand offshore operations while easing its transportation at the same time. It also offers an advanced data processing tool based on a purposely-developed wind, wave, and current-combined numerical model, providing an integrated solution for the current challenges of offshore wind assessments.

HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN CONSTRUCTION



The **COVID-19 pandemic** has plunged many global contractors into one of the most challenging times in their history. As countries across the globe introduced lockdowns and other restrictions, the pace of change for contractors has been extreme, with many changing their ways of working overnight. However, the **startup scene** has kept growing more and more, and entrepreneurs have been developing innovative projects and focusing much of their attention on developing new materials as well as sustainable and environmentally-friendly solutions.

We have explored various trends in the construction tech industry. More specifically, we have focused our study on how eco-design, waste management, new business models, new tools, and new material solutions are accelerating the industry in shifting to a more sustainable future.

We have to highlight two interesting startups, **@Concular**, a digital platform that enables circular construction, and **@Honext Materials**, a Spanish startup that develops sustainable construction materials.



Dominik Campanella
Co-Founder
@Concular

Concular is enabling circular construction by providing a digital platform which is matching the supply and demand of construction materials. Materials from deconstruction projects get digitalized with material passports based on blockchain technology. This supply is then getting matched with an AI-based algorithm with the demand material lists of upcoming projects. Concular not only matches the materials, but also takes care of the supply chain to get the material from the deconstruction to the new site. To make this happen, Concular is working with the largest architecture offices, project developers, and building owners to bring circularity in their projects.



Berta Julia
Brand Manager
@Honext

Honext combines the circular approach to production with a local-first distribution model that eliminates the need for the long-distance transport of the final product. The company's goal is to build a distributed global network in which each of its partners has the capability to produce Honext boards directly within their premises.

The company sees itself as a research-first provider of technological solutions for the management of cellulose waste. As such, Honext focuses its circular economy DNA on establishing partnerships that can secure the path towards a more sustainable future.



4. RESHAPING EUROPE'S RETAIL INDUSTRY

With the circular economy, we are presented with a paradigm that flees from rapid consumption: from using and throwing away through a commitment to a reality and an economic future based on recycling and making products and services which also have value in their maintenance reuse.

The mission of retail marketing is **sustainability**, through a retail strategy that considers the ability to repair or return the product or service to its original state while providing even more quality to reintroduce it into the value chain.

In this aspect, there are many possibilities to consider from the retail perspective, such as the **design of spaces** made of recyclable, removable, and reusable materials, manufacturing with recyclable—or, in the best scenario, biodegradable—materials, and the reuse of products and services. The current economic model depletes our environment's natural resources and shows great environmental irresponsibility. A new economic and social system is a big commitment to differentiation and the ethics and values of companies that coexist in society.



KEY ENVIRONMENTAL ISSUES

Footprint: energy, water, chemicals, solid waste, direct CO₂, and emissions.

Waste creation: because products are discarded after being worn for a relatively short time.

Raw materials scarcity: The retail industry relies on non-renewables resources, including oil, to produce synthetic fibers.

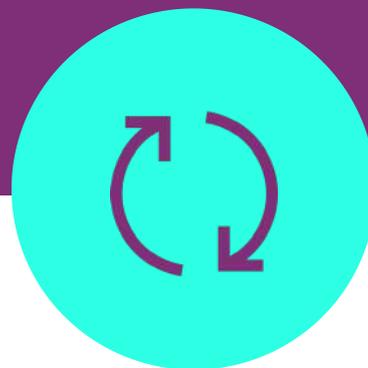


NEW CONSUMPTION TRENDS

Sustainability: Younger consumers are seriously concerned with social and environmental causes.

End of ownership: new rental and subscription models.

Secondhand: disappearing stigma around buying secondhand and increased convenience of resale and rental items due to enabling digital platforms.



KEY CIRCULAR ECONOMY STRATEGIES

Adopt **new business models** to increase utilization (e.g. resale, rentals, etc.).

Extend useful life through reuse and repair.

Ensure products are made from safe and **renewable materials**.

Ensure products are collected, sorted, and **reused or recycled**.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN RETAIL: @UNIBAIL RODAMCO



Jose María Gonzalez
**Sustainability &
Innovation Director**
@Unibail Rodamco



Described as the **ultimate sustainability paradigm**, a circular economy is an economic system aimed at reducing resource use and waste generation by considering waste as a resource. The retail and real estate industry needs to work out ways based on sustainable consumption to reuse and not just recycle materials, thus creating a viable economic solution that doesn't add costs.

Unibail-Rodamco-Westfield is the largest commercial real estate company in Europe and is a component of the EURO STOXX 50 stock market index. Its portfolio consists of retail property, office buildings, and convention centers within Europe and North America.

In 2016, when Unibail-Rodamco launched **Better Places 2030** in Continental Europe, we set the most ambitious environmental target in the industry: to reduce our **carbon footprint by 50%** across our value chain between 2015 and 2030. The strategy rests on three pillars: Better Spaces, Better Communities, and Better Together.

Creating and operating **better spaces** means designing sustainable buildings in terms of a decreased carbon footprint, energy efficiency, the circular economy, and biodiversity. We work with the best architects, engineers, construction firms, and operating partners to ensure we are at the forefront of industry standards. We collaborate with our tenants, contractors, and partners for efficient resource use, with the aim to reduce emissions from operations by 80% and from construction by 35% by 2030. And Better Spaces goes beyond buildings. It also means increasing connectivity and advancing sustainable modes of transportation. Reducing the carbon footprint of our visitors' transport is a priority, and we implemented ambitious Mobility Action Plans to conduct an exhaustive diagnosis by asset and have a clear vision of potential improvements.

We are a catalyst for inclusive growth, and make positive contributions to the social, environmental, and economic well-being of the communities in which we operate. Through **Better Communities**, we seek to foster local economic development, engage with stakeholders, provide jobs, and promote responsible consumption.

We encourage and empower our teams to become sustainability and diversity change-makers. Through **Better Together**, we bring our teams together by inspiring them to act sustainably every day, from taking part in volunteer initiatives to promoting diversity and inclusion.

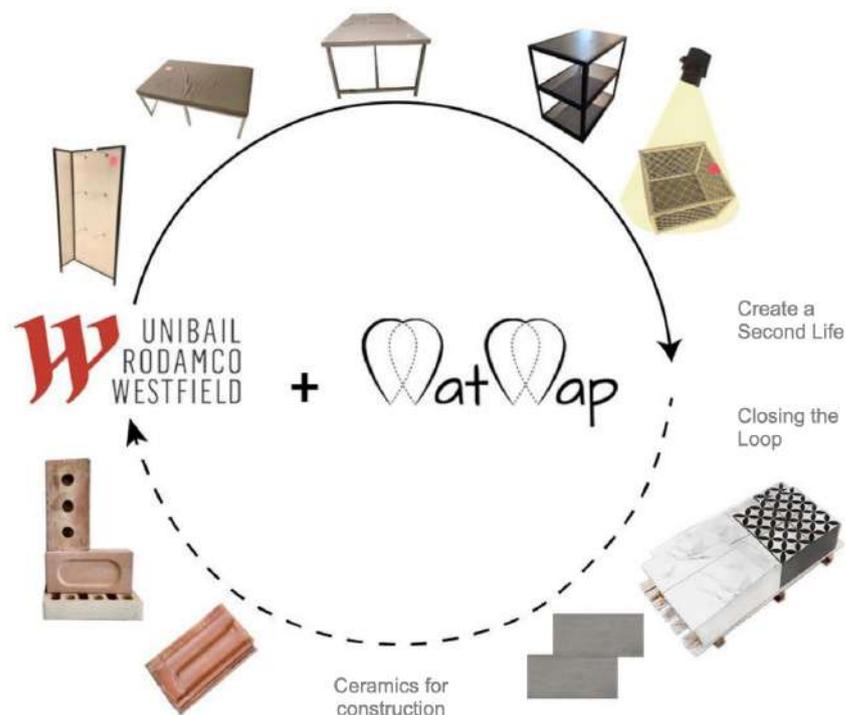
HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN RETAIL: @UNIBAIL RODAMCO

Sending **zero waste to landfill by 2025** is one of the targets related to circular economy. To reach it, we're working with innovative solutions.

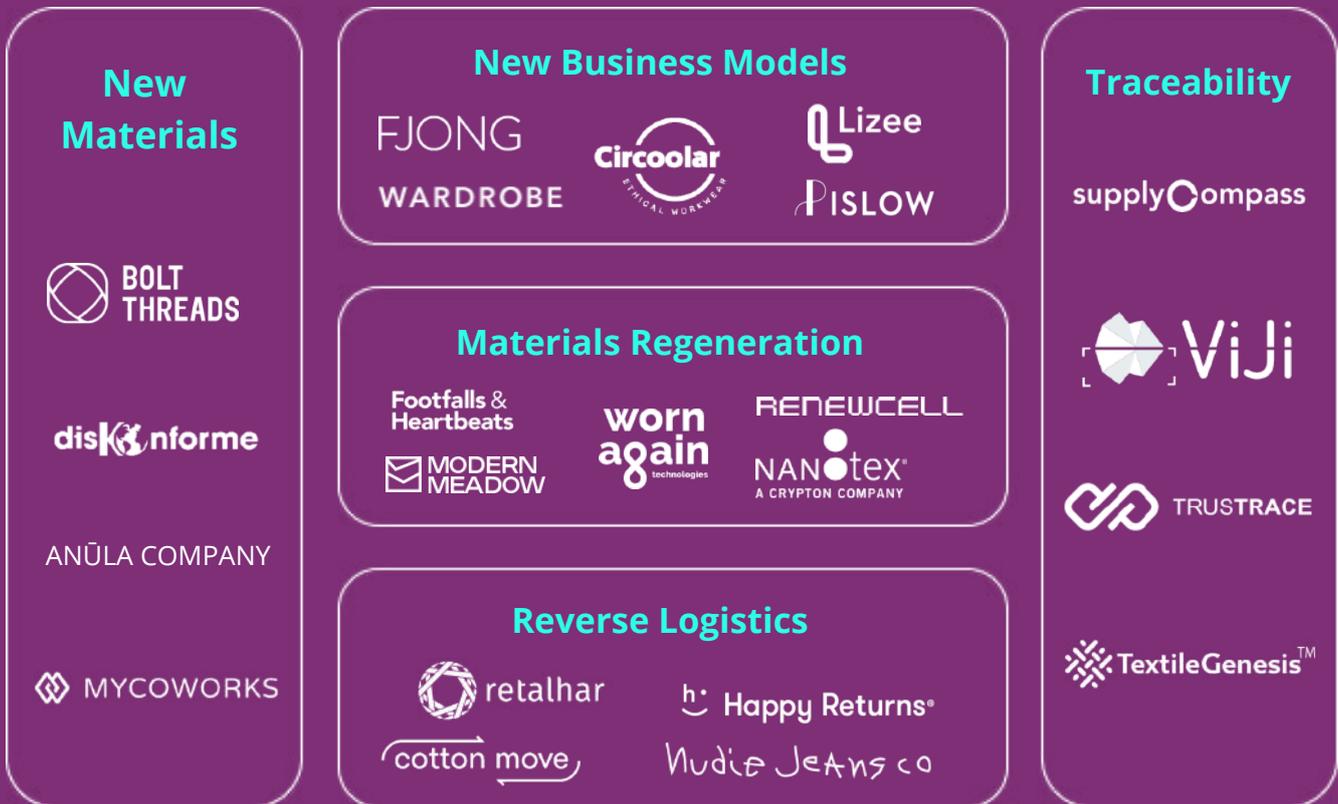
Back in 2019, we partnered with **@ToGoodtooGoo** to fight against food waste. The startup's innovative and green solution enables bakeries, coffee shops, and other food retailers to sell their unsold food products on a smartphone application at a discount price for consumers instead of wasting it. Wasted food has environmental, economic, and social implications. As a result, all the shopping centers in the Unibail-Rodamco-Westfield portfolio in Spain joined the mission of Too Good To Go "Waste Warriors" with the aim of saving more than 10,000 kilos of food and to reduce, above 20,000 kilos, CO2 emissions.

In addition, this year, we teamed up with the Spanish startup **@Matmap** to give a second lease of life to our used construction materials. MatMap is an online platform that connects construction companies who have materials left over with creative professionals who can reuse them. MatMap's objective is to promote efficiency and optimization in the use of materials, and to minimize waste. Unibail-Rodamco-Westfield partnered with @Matmap to reuse construction materials in the refurbishment project in La Maquinista Shopping Center (Barcelona), give them a second life, and therefore, close the loop.

Corporate Social Responsibility is a core component of what we do and who we are as a business in each of our locations, and our Better Places 2030 strategy onboards the environmental challenge of the circular economy.



HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN RETAIL: THE TEXTILE INDUSTRY



As e-commerce continues to grow, digital fitting solutions are increasingly important in addressing the **sustainability challenges** of ill-fitting clothing, which results in increased returns and stock issues. Similarly important are reusable packaging and innovations in the recycling of polybags, the most common packaging for clothing. Also, circular business models such as rental solutions are gaining traction with both consumers and brands. And the creation of a digital clothing collection offers a glance into a digital future of fashion that wastes nothing but data.

We've explored the various trends in the **textile industry** driving innovation and sustainability. More specifically, we have focused our study on how new materials, new business models, material regeneration, reverse logistics, and traceability solutions are accelerating the industry in shifting to a more sustainable future.

We have to mention two interesting solutions: **@ANULA COMPANY**, a slow fashion brand for an ethical life made in Spain, and **@Circoolar**, an ecological workwear brand: recycled, recyclable, and zero waste.



BLUSA 526 KELTY
FALDA 1709 PICADILLY



Paula Perez
Co-Founder
@ANULA COMPANY

We put products and materials above trends, eco-design, sustainable materials, quality above quantity, and brands that generate value for all people and living beings throughout the entire production chain, including the final consumer. We are the new industry in the textile and online fashion sector; we are the alternative. We believe that instead of generating a similar impact as the current fashion production and consumption system, ANULA COMPANY can be a tool for positive change, and we work every day to achieve it.



Luís Ribo
CoFounder
@Circolar

The fashion industry is the second-most-polluting one in the world, generating huge amounts of waste (new plastic) as well as social inequalities. With the aim of dressing companies with their own values while improving the lives of people and the planet, Circolar was born. At Circolar, we apply the principles of the circular economy and its social impacts in the design, production, and manufacturing of workwear. Garments of eco-friendly origin, made with recycled and organic materials, have a positive social impact since they are made in local workshops for social insertion and female empowerment. These garments also have circular-zero residue thanks to eco-designs that favor their recyclability and a collection service after their useful life that ensures their entry into waste managers, where they will be given a second life.



5. TOWARD A CIRCULAR ECONOMY IN THE FOOD INDUSTRY

The industrial production model that we use to produce and distribute much of our food does not use resources effectively and has a number of serious associated problems. For instance, between a third and a half of food is wasted, and the way we produce much of that food causes widespread natural degradation. This situation will be greatly exacerbated by population growth and shifting demographics in the next 30 years. Concisely put, our current food system operates on a wasteful linear model with many lost opportunities and consequential negative social and environmental impacts—all of which are set to increase.

The **circular economy** could help. A traditional linear economy is where you make, consume, and throw away. Moving to a circular economy is all about creating a circle where you design out waste and pollution by keeping products and materials in use for as long as possible, finding ways to create new resources from what you discard. The linear economy creates waste through a model that flows as take, make, use, and dispose of. Meanwhile, a circular economy eliminates waste through a cyclical model: make, use, return, recycle, reuse, and make.



KEY ENVIRONMENTAL ISSUES

Waste generation: between a third and a half of food is wasted. On average, 30% of all food produced does not make it to the plate.

Footprint: usage of plastic materials in packaging, the impact of marine litter, environmental degradation, and CO₂ emissions.

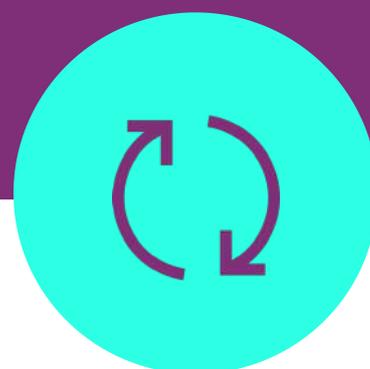


NEW CONSUMPTION TRENDS

Consumers are more eco-conscious than ever and very careful about their food and beverage choices.

Rising awareness of food-related health issues, including diabetes and obesity.

Growing preference for diverse ingredients (e.g. proteins, indigenous species, etc.) and shifting dietary preferences.



KEY CIRCULAR ECONOMY STRATEGIES

Source food grown regeneratively, and locally, where appropriate.

Apply circular practices to controlled or precision agriculture solutions.

Prevent surplus edible food in production.

Design food products and supply chains to eliminate waste, bring production closer to consumption, and regenerate nature and soil.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN FOOD: @MOLINOS



Ivana Odone
Environment
Analyst
@MOLINOS



In the first half of this century, as the world's population grows to around **9 billion**, global demand for food, feed, and fiber will nearly double while increasingly, crops may also be used for bioenergy and other industrial purposes. New and traditional demand for agricultural produce will thus put growing pressure on already scarce **agricultural resources**. And while agriculture will be forced to compete for land and water with sprawling urban settlements, it will also be required to serve on other major fronts: adapting to and contributing to the mitigation of climate change, helping preserve natural habitats, protecting endangered species, and maintaining a high level of biodiversity. If this weren't challenging enough, in most regions, fewer people will be living in rural areas, and even fewer will be farmers. They will need new technologies to grow more from less land, with fewer hands.

With more than **118 years of history** at Molinos Agro, we permanently renew our challenges always guided by the objective of connecting the product of our soil with the world. We add value to our country and reach more than 50 border destinations outside of Argentina. Contributing to **sustainable development** and **circular economy** is a core element of the Molinos corporate strategy and of our core values.

And this requires an important **cultural change** from the company. It is a process that will demand time, innovation, development, human, technological, and financial resources, plans, monitoring, and management indicators, but above all, it will need a strong decision and conviction of all the organization. It is not only about **recycling** or improving the value chain, it is also about collaborating with other industries to **reuse** your waste and turn them into raw materials.

Collaboration is one of the keys for unlocking sustainability, with leaders from all sectors of society agreeing that solving environmental and social challenges requires unparalleled cooperation. And this is why we always try to collaborate with other industries to become more circular.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN FOOD: @MOLINOS



Patricio Navarro
ESH Manager
@Molinos



Because our most important waste stream is **organic solids**, we are continuously working to optimize our processes and equipment to achieve its reduction in the first instance and its reuse in the second instance. One of the actions currently being carried out is the recirculation of the **fine particles of soybean meal** captured by the suction systems. They are transported to the production lines, reincorporated to the production lines, and integrated into the soybean pellet. We currently have the approval of the investment to expand and diversify this system and bring it up to 7 tons/hour.

We are also working on another project to reduce the amount of organic solid waste. In 2021, the **preliminary cleaning** work of the plant was completed. This new plant allows sieves and mills to recover the soybeans that remain in their bean and grind the beans and sticks—which were previously disposed of as waste—to incorporate them into the pellet, now becoming part of our product and thus reducing the amount of organic solid waste.



CIRCULAR ECONOMY AND INDUSTRIAL SYNERGIES FOR A ZERO-WASTE FUTURE: @CORBION



Ester Esgueva
Hombrados
EHS Manager
@Corbion



Corbion



The European economy is largely **linear by design**, using raw materials to make products and throwing away low-value byproducts and waste. This design is inefficient, tends to overuse resources, and generates large volumes of waste, which affects both the environment and human health. Thus, the decoupling of waste production and related impacts from economic growth is critical to a transition to a circular economy and an industrial system that is restorative or regenerative by design. To create a future with enough resources for a growing population, the world needs to adopt circular systems, where material flows are recovered and reused.

A **circular economy** comes as an alternative to the current model of production and consumption, with the potential of solving environmental challenges and at the same time, opening business opportunities and generating sustainable economic growth. The transition towards a circular economy through eco-efficient and sustainable processes requires decoupling economic activity and environmental degradation. This involves changing to a more efficient production model that meets the real needs of society under environmental capabilities.

At Corbion's production facilities in Spain, we produce **lactic acid** from microbial fermentation that is used for many applications such as food, plastics, and biomedicine. During the lactic acid production processes, two main byproducts are generated: **gypsum and Ferkal**. Following Corbion's circular strategy, we have characterized these two byproducts and have identified synergies with other industries where they could become valuable production inputs. Our objective is to implement a zero-waste strategy through the re-valorization of our byproducts.



CIRCULAR ECONOMY AND INDUSTRIAL SYNERGIES FOR A ZERO-WASTE FUTURE: @CORBION

Gypsum is a versatile mineral composed of calcium sulfate dihydrate that can be used in the production of many products. After analyzing a large set of alternatives with consulting firm Inveniam Group, we selected two different exit routes to re-valorize Gypsum: cement and wallboard production. In both cases, Corbion's byproduct Gypsum will become a production input in neighboring industries, hence creating a truly circular material flow. This strategy will result in synergies between industries while reducing the environmental impact of all the companies involved.

Regarding **Ferkal**, we worked with the **University of Granada** and **Inveniam Group** to analyze its agronomical value as a natural soil additive. The results of the analysis were outstanding. We found that Ferkal is a soil amendment with great potential in soil remediation. Therefore, at Corbion, we are looking to partner with suppliers of agricultural inputs to commercialize Ferkal and its side products in the agro-industry. The introduction of Ferkal in the supply chain of the agro-industry will bring great benefits to farmers while reducing the production of synthetic agricultural inputs.



These initiatives fit in **Corbion's** overall strategy to tackle the preservation of food and food production and human health with initiatives to increase food safety and food shelf-life, preserve natural resources, increase health and well-being with biomedical and biochemical solutions, and preserve natural resources with biodegradable alternatives, always taking under consideration the impact on our whole value chain.

COLLABORATIVE LOGISTICS IS THE ONLY WAY FORWARD FOR THE INDUSTRY: @LOGIFRUIT



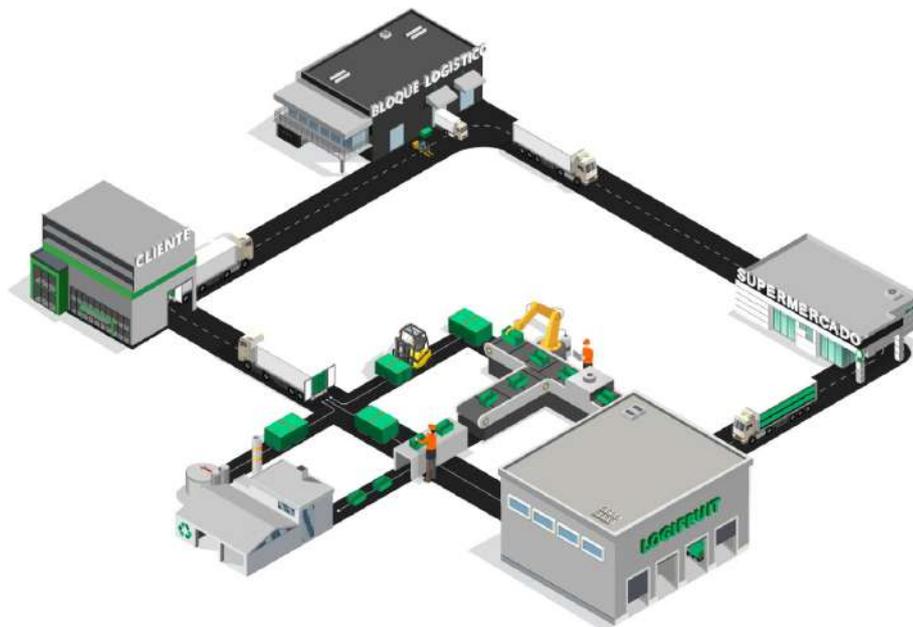
Cristian Ull Molina
Head of Innovation
@Logifruit

Logifruit was founded and has grown following a sustainable model based on the efficient management of resources, applied to both its workflows and packaging. At its core are the responsible use of materials to reduce the company's environmental impact.

In a bid for a more positive contribution to the environment, Logifruit fully embraced the circular economy strategy, by developing a closed loop system that helps expanding the lifespan of the packaging. Eco-design plays a crucial role in designing containers, not only to reduce the amount of raw material needed but to facilitate re-usage, reparation, and recycling. It also enables a more efficient transport and storage of containers reducing the carbon footprint significantly of all the parties involved in the value chain. Thanks to this strategy, Logifruit saved 767 tons of CO₂ to the environment and recycled more than 4000 tons of plastic in 2020 alone.

The company is also committed to constantly reducing its impact on the environment by optimizing water consumption, energy usage, cleaning products, and raw materials.

Logifruit asserts that sustainable logistics is the sum of collaboration, digitization and circularity.



HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN THE FOOD INDUSTRY



The **food and beverage industry** is one that is now actively undergoing collective change. With the industry facing its biggest challenges yet—overpopulation, climate change, virus outbreaks, stagnating resources, and changing consumer demands—new food startups are working on disruptive concepts to make our nutrition more resourceful, efficient, and sustainable.

We've explored the various trends in the food and beverage industry driving innovation and **sustainability**. More specifically, we have focused our study on how food ecosystem hubs, waste management, nutrients recovery, food safety, and urban agriculture solutions are accelerating the industry in shifting to a more sustainable future.

We'd like to highlight two interesting solutions: **@BeBord Foods**, a new global food ecosystem, and **@Too Good To Go**, a startup that allows you to purchase unsold food from top eateries at the end of service to prevent it from being thrown away.



Madalena Rugeroni
Country Manager Iberia
@Too Good To Go

Food waste is a global and complex issue. Too Good To Go is a scale-up that helps food stores such as restaurants, bakeries, or supermarkets to reduce their surplus food at the end of the day through a mobile app. Additionally, it is now actively building a global Movement Against Food Waste by running awareness and education campaigns to inspire and empower everyone to take action against food waste, as well as working with big players in the food industry and public institutions to tackle this problem and its consequences. Launched four years ago, the company is headquartered in Copenhagen, Denmark, and is now helping businesses in 15 countries with a community of more than 37 million users and 90,000 partners, having already saved more than 76 million meals.



Sergio Prendoné Pita
CEO & Founder
@BeBordFoods

No company can be exempt from including decisions related to the circular economy in its business plan, as it is an essential factor both for its products and services and for clearly defining the company's profile. New consumers base their purchasing decisions on confirming that those companies they choose have been responsible for caring for the planet and future generations. Those who do not take these principles and values related to sustainability urgently will see their growth and subsistence seriously affected in the short or medium term.



6. A NEW MODEL FOR VALUE CREATION FOR THE FMCG INDUSTRY

The transition to the circular economy will **impact businesses**, workers, and consumers in different ways and in varying degrees across the economy. The fast-moving consumer goods (FMCG) sector is crucial for this transition. In 2016, the consumer electronics sector alone produced 44.7 million tonnes of e-waste, with mobile phones accounting for 435 thousand tonnes—and a mere 20% being recycled.

Mobile phones, computers, and other products have undergone a period of rapid growth to become virtually indispensable to today's lifestyle. Yet their production, use, and disposal can entail a significant environmental burden. This study looks at the opportunities and challenges that arise from implementing circular economy in the FMCG industry.



KEY ENVIRONMENTAL ISSUES

Waste generation: Around 80% of materials used in the manufacturing industry end up in incinerators, landfills, and wastewater.

Resources: are extracted from earth on a one-way track with no plans for reuse or active regeneration on the natural systems from which they have been taken.

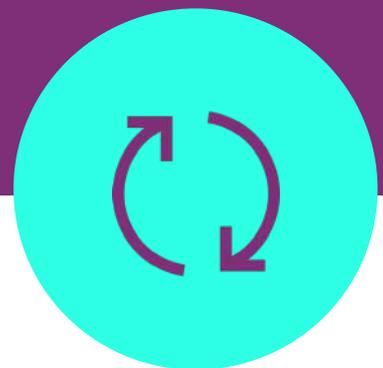


NEW CONSUMPTION TRENDS

The end of ownership and growth of subscription economy.

Growing middle class in emerging markets: It will generate 3B additional consumers in the next 20 years.

Consumer engagement about products and disposals to recycle.



KEY CIRCULAR ECONOMY STRATEGIES

Reverse logistics: efficient collection systems.

Goods & packaging design: based on zero-waste models.

New business models: platforms, marketplaces, and Products-as-a-Service.

New technologies: to enable circular business.

HOW COMPANIES ARE DRIVING THE CIRCULAR ECONOMY IN THE FMCG INDUSTRY



Cristina Nadal
Sustainability
Specialist
@Unilever



Every day, **2.5 million people** in more than **190 countries** around the world consume one of our brands, which undoubtedly implies an enormous **responsibility** and encourages us to make decisions that contribute to improving our environment. In sectors like food, cleaning, or personal care in which we are present, the circular economy becomes a vitally important axis since they are goods and services that we consume daily, and the consumer is increasingly responsible for the impact of their actions.

Unilever currently employs more than **155,000 people** and more than half of the impact of its activity benefits markets in emerging and developing countries. Unilever owns more than **400 brands**, present in homes around the world, including Skip, Dove, Knorr, Hellmann's, Lipton, Frigo, Ben & Jerry's, Magnum, and Axe.

At Unilever, we want to continue working in favor of society, sustainability, and care for the environment, a path that we began many years ago with the launch of the **Unilever Sustainable Living Plan** (USLP). This year, we have just launched the **Unilever Compass plan**, the new corporate strategy that guides our activity in the social and environmental challenges of the new decade, driving responsible growth and improving the well-being of people, their health, and our planet.

Unilever's strategy about **plastics** use has also reported numerous breakthroughs. In 2019, we became the first major consumer goods company to commit to absolute plastic reduction. In 2020, we shared important environmental progress such as increasing the use of post-consumer recycled (PCR) plastic by around 75,000 tons, which is more than 10% of Unilever's plastic footprint, or launching innovations to reduce absolute plastic use, such as cardboard-based recycled ice cream packaging and saving 4,500 tons of plastic. By 2025, the company is also committed to halving the use of virgin plastic, reducing its use for packaging by more than 100,000 tons, and accelerating the use of recycled plastic.

UNILEVER HAS A COMMITMENT TO THE CIRCULAR ECONOMY IN ITS DNA

We have also launched the **Clean Future program** that will mean moving away from fossil fuel chemicals in Unilever laundry and laundry cleaning products by 2030 and finding new ways to reduce our carbon footprint and environmental impact. To do this, Unilever will invest 1,000 euros that will be allocated to research, development, and global innovation in circular cleaning chemistry.

In food, we have promoted the **Future Foods initiative**, with which we are committed to helping people make a transition towards healthier diets and contribute to reducing the environmental impact of the global food chain. The goal is ambitious: Unilever has set itself to reach 1,000 million sales in the plant food segment in five years via the promotion of vegetable meats and dairy alternatives through new brands such as The Vegetarian Butcher and with the expansion of the portfolio of brands such as Knorr, Hellmann's, Magnum, or Ben & Jerry's. For this, we have invested 85 million euros to support research on meat alternatives, efficient crops, and sustainable packaging through the University of Wageningen in the Netherlands.



GIVING A SECOND LIFE TO THEIR PRODUCTS: @ALCAMPO



Yolanda Jimenez
RSC Director
@Alcampo



Willing to give a new boost to the circular economy, and faithful to its sustainability policy to reduce the impact of the production circle on the environment, **Alcampo** worked with **Saica Natur** to give a second life to many of their fruits and vegetables that were ending up in their containers.

@Alcampo has created a new compost made from its own organic waste, which, in addition, is packaged in recycled materials from the plastic waste generated in its centers. The circular flow begins in 25 Alcampo centers where organic waste is separated into watertight containers, which, once filled, are transported by Saica Natur to a composting plant for recovery. The universal substrate is enriched by 10% by this high-quality compost that provides a nutrient content (nitrogen, phosphorus, and potassium) in a natural way, avoiding chemical enrichment.



The compost made from Alcampo's organic waste is part of Alcampo's Zero Waste to Landfill megaproject: a project with which the value chain intends that in the short term, all its centers will be able to correctly segregate their waste, recover it, give it a second chance in the production cycle, and thus contribute to a better and greater circular economy.

The Zero Waste to Landfill project began its journey in 2013, and since then, it has already avoided taking more than 6,100 tons of organic waste to landfill. And thanks to that, we have been given a second useful life to our products. In fact, thanks to the work between Alcampo and Saica Natur, materials that until now were deposited in the landfill have been reintroduced into the productive circle, thus avoiding soil, water, and atmospheric pollution.

OUR COMMITMENT TO SUSTAINABILITY AND THE CIRCULAR ECONOMY: @ARCOR



Alejandro Peris
Sustainability
Director
@ARCOR



Well-known institutions highlight our sustainable management focused on the **creation of economic, social, and environmental value**. Since 1951, Arcor Group has pursued the same dream: to be a company that grows taking care of people and the planet.

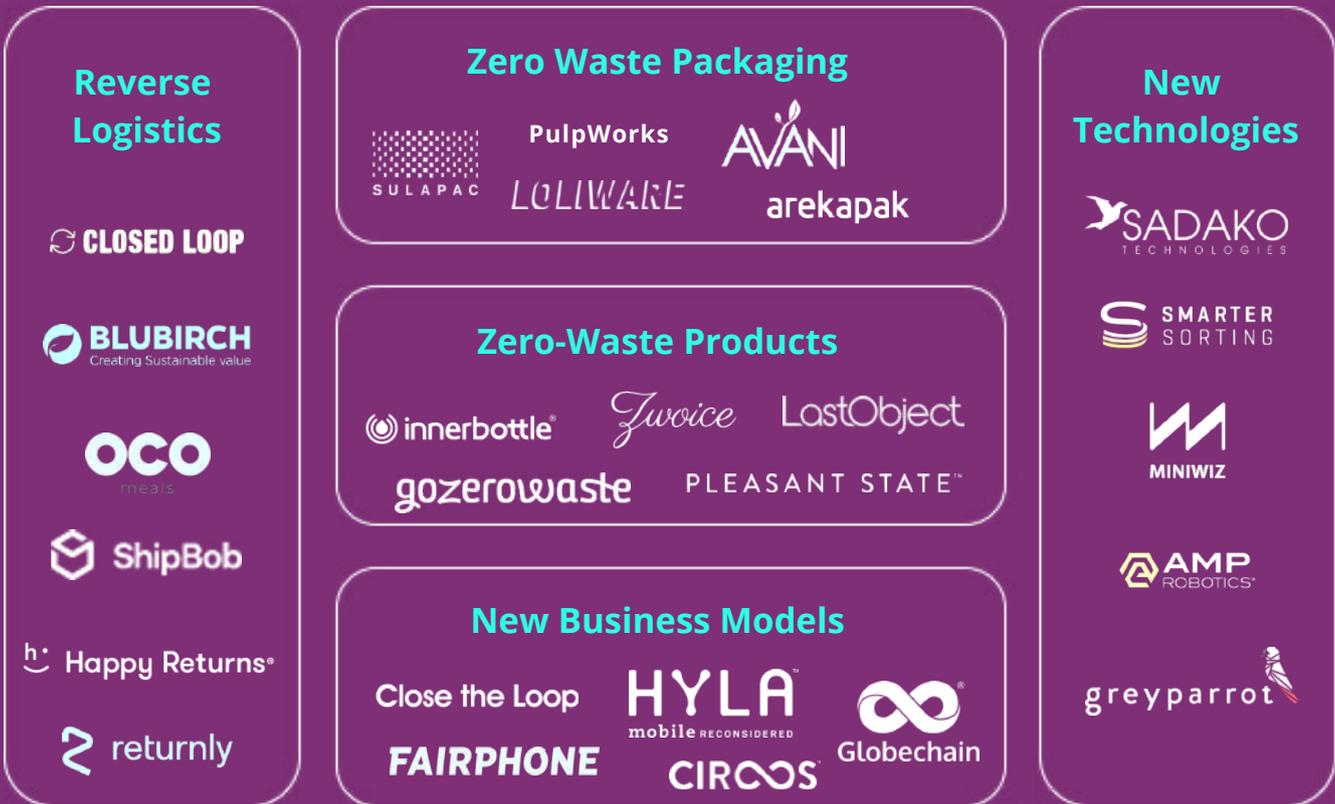
We were founded with the aim of **producing quality food** that is accessible to consumers around the world. Since our creation, and through the first collaborative social initiatives in the plants, we expressed our conviction of being a responsible member of the community.

One of the most paradigmatic cases of the **circular economy** within the Arcor Group is a composting project for organic industrial waste carried out jointly with the Chiarello company. The residues from the sugar production process were used to improve the soils of our fields for the cultivation of sugar cane, with a low efficiency of incorporation of nutrients into them. In 2019, we made a pilot with 1,000 tons of waste that were subjected to an industrial composting process. This fertilizer was used in experimental trials in cane production with organic batches, obtaining good results with respect to cultural performance and sugars.

Thus, in addition to reducing the use of urea, with the consequent impact of greenhouse gas emissions, the use of these fertilizers allows us to produce organic cane for European markets with yields very similar to those produced with urea fertilization.



HOW STARTUPS ARE DRIVING THE CIRCULAR ECONOMY IN FMCG



The FMCG industry is undergoing a significant transformation in response to the demand for more convenience, the **COVID-19 pandemic**, and changes in customer behavior. The major FMCG industry trends that address these changes involve sustainable solutions for product development and packaging, improving customer experience, and implementing digitalization. To offer better experiences to their customers and gain a competitive edge, FMCG companies seek omnichannel sales and e-commerce in addition to deploying big data analytics and artificial intelligence (AI) solutions, among others.

In this section, we've explored the various trends in the **FMCG industry**. More specifically, we have focused our study on how reverse logistics, zero-waste packaging, zero-waste products, new business models, and new technology solutions are accelerating the industry in shifting to a more sustainable future.

We'd like to mention two interesting startups: **@Globechain**, a reuse marketplace to redistribute items to charities, small businesses, and individuals, and **@Innerbottle**, an innovative packaging solution for zero-waste and sustainability.



May Al-Karooni
Founder
@Globechain

Globechain is a multi-award-winning British reuse marketplace that connects corporations to charities and people, to redistribute unwanted items in the B2B sector. The company focuses on retail, e.g., fixtures, fittings, and obsolete stock; commercial, including office and IT; and construction, including materials, refurbishments, and demolition. With over 10,000 members, we work with some of the largest companies in retail, medical, and construction. We help enterprises reduce waste by providing a marketplace to redistribute items and generate impact through reuse and sustainability.



Steve Seail Oh
CEO
@Innerbottle

Imagine the disturbing situation when you can see the residue inside the packaging, but can't use it. According to US Consumer Reports, up to 25% of contents inside the conventional packaging are thrown away. This means you throw away \$2.50 every time you buy a body lotion for \$10. Residue inside the container causes not only waste, but also causes environment contamination. INNERBOTTLE has come up with the ultimate zero waste solution to solve the problem. INNERBOTTLE provides an innovative containing solution ensuring zero waste and a sustainable environment. By choosing INNERBOTTLE Brands, consumers will experience a safe and perfect use of contents maximizing satisfaction, and our brand partners get an innovative green earth packaging solution.





HOW TO ACTIVATE CIRCULAR ECONOMY AT YOUR COMPANY

OUR APPROACH

WHY IS IT IMPORTANT?

The mix of multiple technologies, some already mature and others emerging and expanding their industrial application, opens up a world of unprecedented possibilities and brings about exponential change.

The fast spread of the covid-19 virus around the world in the space of a few weeks has not only highlighted the interdependence of the connected economy and the risks of globalisation; it has also accelerated the need for business transformation to meet the new challenges arising from non-presence, new social behaviors, and unmet needs.



PARTNERS ARE ESSENTIAL

New social trends and behaviors are opening up new ways of understanding and doing business. Technology by itself does not add value to the business, but it can empower the organization and enable it to find new ways to respond to both internal and customer needs.

The real capacity to act on these opportunities is limited, as the company is obliged to continuously evolve and improve its core business in order to remain competitive. Collaborative innovation accelerates the pace of transformation in a company and reduces its costs, creating flows of knowledge, processes, and products that did not exist before.

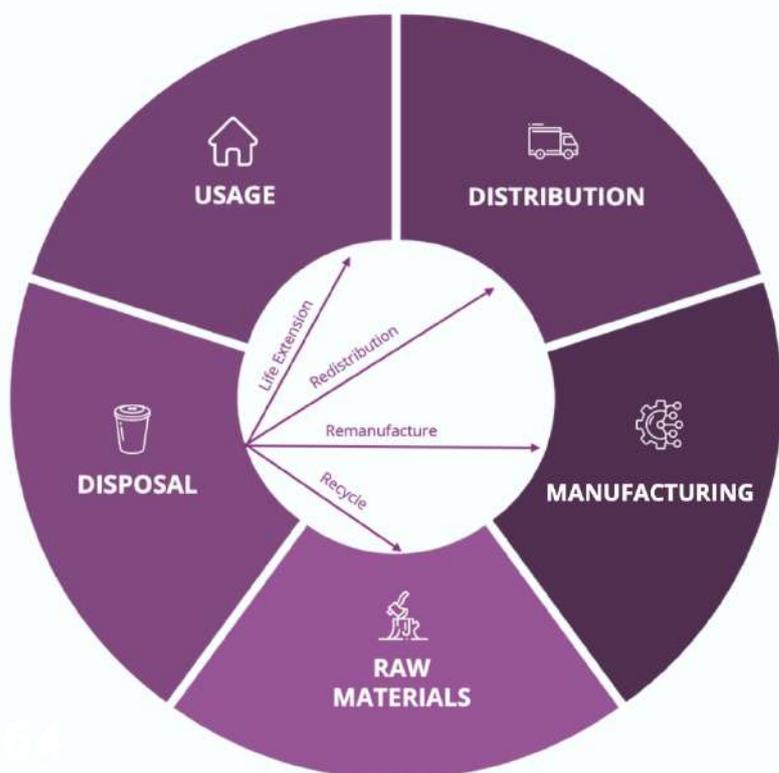
THE CIRCULAR ECONOMY OFFERS US A GREAT OPPORTUNITY: COLLABORATION

2020 was an important year for the collaboration market, yet it is still just at the beginning of its journey. To transition to the **circular economy**, we must collaborate with other companies, review our processes, and involve our value chain and stakeholders.

We have worked with many clients in digital transformation which aim to make their businesses more circular with different methodologies. We developed two different approaches: the '**inside-out approach**' and the '**outside-in approach**'. In the first, we work with the internal culture and the employees to generate tangible benefits from inside the company. In the latter, we incorporate capabilities, business models, or technology from outside of the company. Both strategies have the **same goal**: to help our clients become more circular and generate new sustainable processes or services.

In these two transformation processes, we always involve the appropriate internal or external **stakeholders** (upstream and downstream), as they have to be part of the change and the solution. The implementation of circular strategies allows us to re-design the stakeholder relationship and discover new co-creation models, operations, and business opportunities with them.

If we understand how a complete cycle of circular economy works (see below), we will see that it offers us opportunities to create new processes to generate the circularity part of the paradigm shift we talked about in this Report.

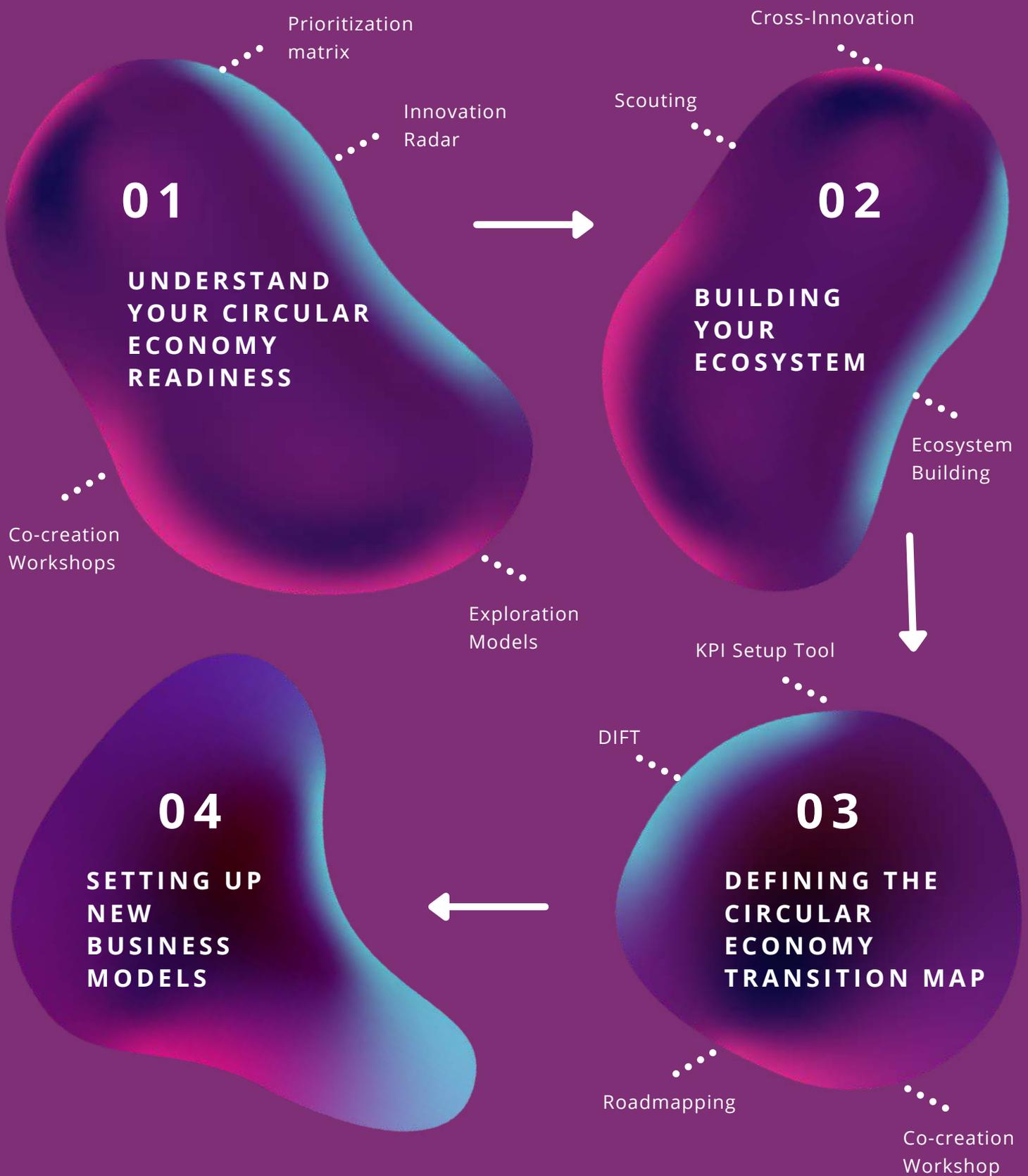


These new opportunities can be addressed as process changes in our current value chain, but in many cases, we will not have the knowledge, capabilities, facilities, or technology to implement them properly.

It is at this exact point that we need to think about collaboration, identifying the relevant players in each area, and looking for the right relationship model in each case.

ACTIVATING YOUR CIRCULAR ECONOMY STRATEGY

Now it is time to implement from scratch or improve parts of the current processes in your company. This does not have to be traumatic; follow our guide to ignite your transition and generate processes of change.

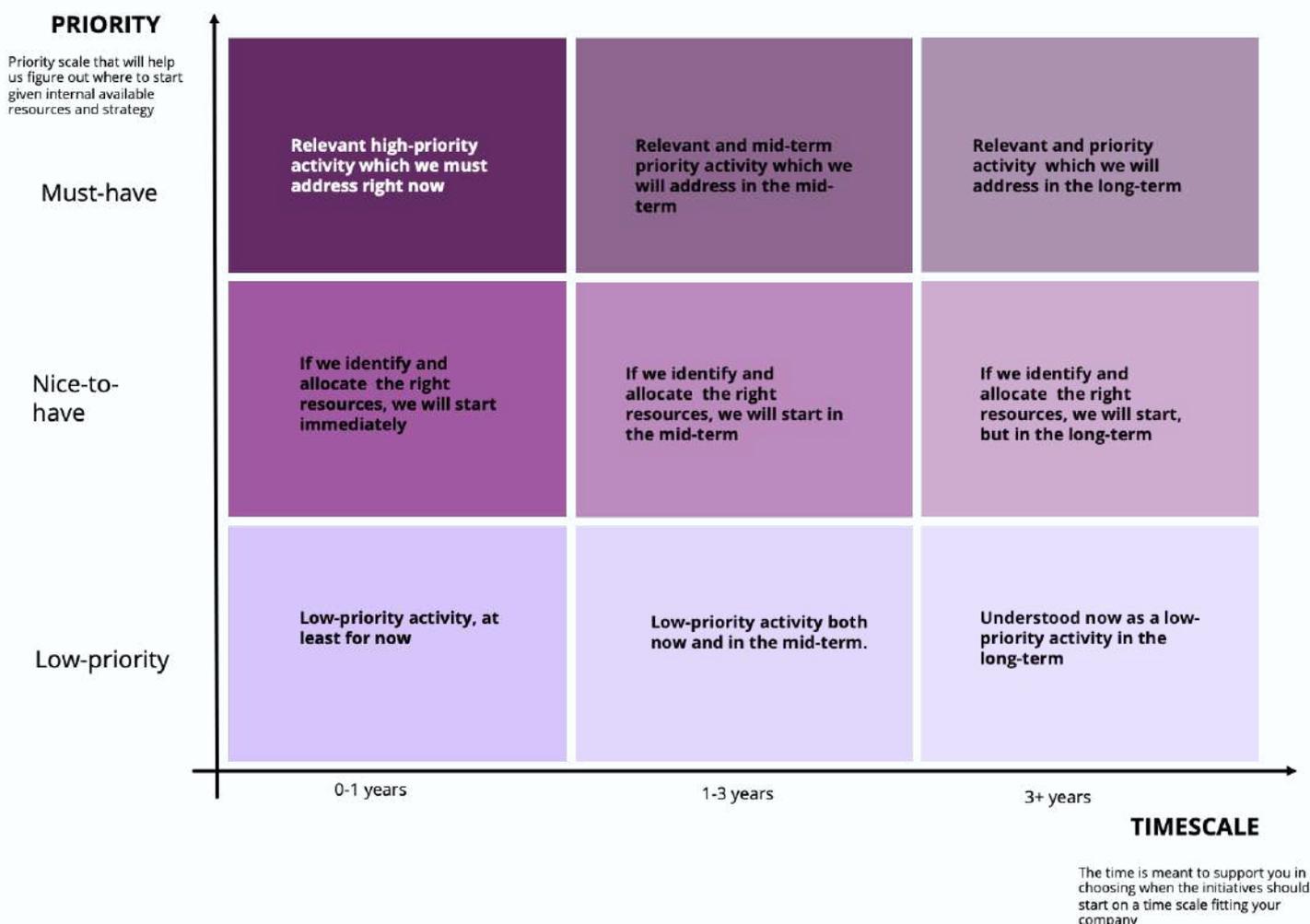


1. UNDERSTANDING YOUR CIRCULAR ECONOMY READINESS

We have to start by asking ourselves the right questions and understanding our priorities. We do this by identifying which aspects we 'must have' and which would be 'nice to have'. We then create a prioritization map based on two major areas that we have already mentioned: a) our current internal capabilities and b) the capabilities of our stakeholders.

- ✓ Where are our strengths and opportunities for circular initiatives?
- ✓ What should be our focus areas for our next steps?
- ✓ What is our timeline for working with this transition path?
- ✓ Where do we see opportunities for circular economy initiatives in our current and future business?

This scoping process is key; we have to imagine models that however seemingly distant or impossible, can be structured in a map of priorities.



It is important that the prioritization process focuses on all areas of the company. Here we give you an idea of how to create these areas:



The result will be a matrix of priorities that will give us the 'raw material' to create our roadmap and key issues.

Our tools



Priorization Matrix

A prioritization matrix provides stakeholders with a reliable process for resolving disagreements and deciding on which proposals to focus on.



Co-Creation Workshops

These workshops allow for rapid ideation and collaborative conversations that create shared understanding amongst teams and those they design for.



Exploration Models

The Exploration Phase is a search for innovative business models, solutions, processes and technologies in the company industry.



Innovation Radar

The Innovation Radar is an initiative supported by GELLIFY focusing on the identification of high potential innovations and the key innovators.

2. BUILDING YOUR ECOSYSTEM

The ecosystem is what will help us build new models, move to circular processes, and connect with other value chains. When we talk about innovation, we often focus on individuals, which is easier but more limited (for example, looking for different raw materials). If we want to create a greater impact and explore new business models, we must involve the right companies, stakeholders, and startups.

Successful innovators approach innovation holistically. They understand that to keep their business units competent, they need to innovate at scale and work on various types of innovations across all parts of the organization. Building and managing innovation ecosystems is about creating agile and open environments in which innovation can thrive. It's about fostering active collaboration while making sure each party truly sees the value of innovation and ensuring that the ecosystem has coherent structures and incentives to encourage it.

To transition to the circular economy, we will have to connect with other organizations, startups, or stakeholders that we did not have on our radar before. For example, we could think about how to take advantage of their waste products and reuse them as raw materials in our value chain

Our tools

1

Scouting

We perform a customized global startup search, delivering to you the early-stage companies with the most potential to impact your business.

2

Ecosystem Building

Add value to commodities through collaborations among the ecosystem, thereby increasing the sustainable and economical value of the business.

3

Cross Innovation

Cross Innovation is defined as a shared work of generating innovative and exceptional design conducted by various actors from firms, customers, and collaborating partners.

3. DEFINING THE CE TRANSITION MAP

Once we have aligned all our priorities and the major areas we want to focus on, we must define the transition map to activate them. We need to explore and partner with the right collaborators to make these ideas a reality. We recommend creating a roadmap divided into fundamental internal and external activities.

INTERNAL FOCUS

The Macintosh team was commonly known as *intrapreneurship*—only a few years before the term was coined— that is, a group of people going back to the proverbial garage, but in a large company. However, that involved a core team of 50 people, which attracted many people who desired to work at a small company.

Some examples:

- ✓ Identify processes to be reviewed or digitized
- ✓ Thinking about **design processes** (Design for disassemble, sustainable product design, Reducing energy consumption in the manufacturing process, Designing considering the whole life cycle process).
- ✓ Thinking about **raw materials**
- ✓ **Culture**: this is an important aspect to address; we normally recommend creating internal processes to integrate internal ideas from the team, while simultaneously integrating them into the process itself.



3. DEFINING THE CE TRANSITION MAP

EXTERNAL FOCUS

After a decade of rapid evolution to meet the challenges of climate change, a post-peak oil energy economy, and a burgeoning global population, looking for external partners to innovate is the strategy of choice across sectors and around the world. The external search for information and its integration in the context of innovation is one practice that can lead to increased success.

External partnerships and collaboration projects in the development of sustainable products, services, and initiatives are becoming more and more popular. In a more connected world, external partnerships offer opportunities to reduce research costs, diversify risks, and bring innovations to market more quickly. Some examples:

- ✓ Identify processes where we work with stakeholders. Check how we can optimize the collaboration, change the relationship, or generate new ones.
- ✓ Optimize logistics
- ✓ Find new alliances that reduce our environmental impact.

In this phase, it is important to work with a few achievable, measurable objectives and to gradually generate internal and external confidence to integrate more structural processes with greater impact each time. Speed and cadence will be key in this roadmap.

Our tools

1

KPI setup tool

Combine data to create cross-functional overview of your company. Track your company performance with real-time KPI dashboards.

2

DIFT Program

Digital Intrapreneurs Fast Track is the Intrapreneurship Programme that turns your team into the company's innovation engine, to generate solutions and projects from within.

3

Co-Creation Workshops

These workshops allow for rapid ideation and collaborative conversations that create shared understanding amongst teams and those they design for.

4

Roadmapping

Roadmap to implement CE through a "reconsideration" of either product, service or process. GELLIFY will include its expertise to scout and assess any specific technology you might require to implement this proposal.

4. SETTING UP NEW BUSINESS MODELS

Where there is a problem, there is a business opportunity. Where there is a big problem, there is big business. A circular economy provides companies with the keys to a new kind of growth and a chance to solve some of the biggest challenges of our time. New business models focused on reuse, repair, remanufacturing, and sharing models offer significant innovation opportunities.

These alternative models can be:

- ✓ Models evolved from our own and current ones (switching to product as-a-service, subscription models, etc.)
- ✓ Completely new models in Partnership with other corporations, suppliers, or any stakeholder in the value chain, etc.
- ✓ Mixed models of the Product+Service type

According to Ellen MacArthur Foundation, applying circular economy principles could unlock up to EUR 1.8 trillion of value for Europe's economy. Business plays a central role in creating the systemic change required to reap the financial benefits of this transition. Collaboration with suppliers, customers, and infrastructure is the only way to build a circular economy with benefits throughout society and the real potential is when we can generate sustainable processes for the planet and the business.





ABOUT US

GELLIFY is the first innovation platform dedicated to the B2B market, supporting start-ups and companies.



INVESTMENT PORTFOLIO

GELLIFY is an investor and industrial partner of a portfolio of 25+ B2B startups in software and enabling technologies, thoroughly vetted

GELLIFY's experience made 6 software startups in Gartner Magic Quadrant

Azimut as investor partner of GELLIFY (50 m€)



DIGITAL TRANSFORMATION ACCELERATOR

GELLIFY brings a "digital native" team specialized in Digital Transformation acceleration for Banks and corporations: consultants, CX designers, architects, system integrators and developers. Our distinctive capabilities are: Innovation Advisory, Interactive, Enterprise Software Platforms, Analytics, Community Building.



WE FOCUS ON B2B SOFTWARE MARKET, DRIVING STARTUPS TO SOLID GROW



AIR

You have a good idea and a great team



LIQUID

You close deals and have revenue



GEL

You produce increasing profits



SOLID

You have a concrete company

WE SHARE OUR ENTREPRENEURIAL EXPERIENCE WITH CORPORATES TO ACCELERATE THEIR DIGITAL TRANSFORMATION



We have a start-up approach, delivering fast what really matters, with no frills



We create new ecosystems where investors, startups and corporates can create shared value



We partner with our clients in building newcos leveraging on our track-record as b2b entrepreneurs



THIS IS ONLY THE BEGINNING.

Let's continue the conversation in our
Community:

www.goingcircularhub.com

CONTACT US

www.gellify.com

marketing@gellify.com