



Socio-Economic Research and Applications (SERAP)

A Knowledge Digest on Circular Economy

This Knowledge Digest intends to highlight that a Circular Economy has gained relevance in recent years, exacerbated by increased climate change risk and changing attitudes towards consumerism. Considering this structural shift in the global ethos, it is important to understand how a Circular Economy can offer dynamic changes in the global marketplace and change our perception of consumption.

A Circular Economy refers to an economic system that keeps materials, products, and services in circulation for as long as possible. According to the Save Our Seas 2.0 Act, an Economy uses a systems-focused approach and involves industrial processes and economic activities that are either restorative or regenerative by design. It enables the use of resources that maintain their highest value for as long as possible and aims for the elimination of waste and wastefulness within the processes via the use of superior-designed materials, products, and systems. A refined business model is required, with changes being made in the standard model to incorporate better ways of mining resources, making them into products, and regulating how and when they become waste. A Circular Economy reduces the use of materials and redesigns materials, products, and services, to create a less intensive resource usage model that reimagines "waste" as a resource that can be used to manufacture new products and materials.

Circularity is embraced within the sustainable materials management (SMM) approach that federal agencies have pursued since 2009. A Circular Economy approach, in line with the SMM guidelines, allows for reducing negative impacts sustained from the lifecycle impacts of materials that release chemicals into the environment, resulting in multiple kinds of pollution that have a tangible climate impact. By decoupling material use from economic growth, the narrative around productivity can be changed to include a sustainable and conscientious approach to businesses and lifestyles.

Working towards a Circular Economy is integral to mitigating climate change risk. Immediate action must be taken to address the climate crisis, and material recovery has an essential role in the matter, as natural resource extraction and processing contribute to about half of all greenhouse gas emissions on a global scale. Therefore, the Circular Economy, when designed in an integrated and forward-looking manner, has the potential to protect the environment, improve economics, and improve social justice. Sustainability from the Circular Economy is predicated on social equity because the resource use cycle disproportionately affects vulnerable communities. Therefore, achieving Circularity within the Economy could also promote social equity.

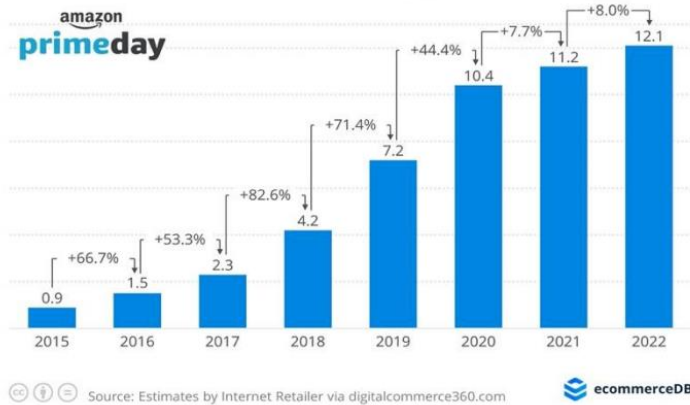
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Statistics and Graphs

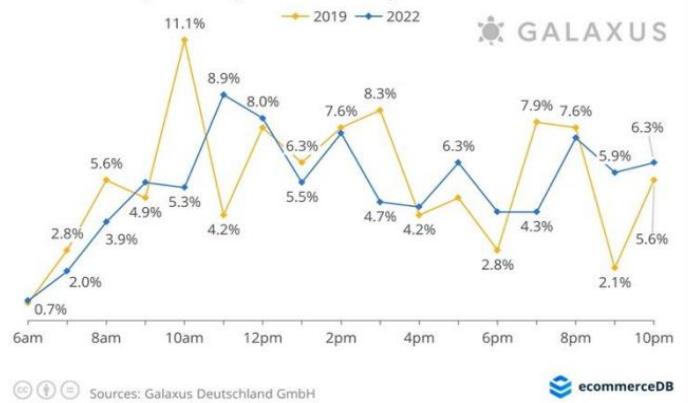
Amazon Prime Day 2022 again broke all previous sales records

Estimated worldwide sales of Amazon on Prime Day (in billion US\$ dollars)



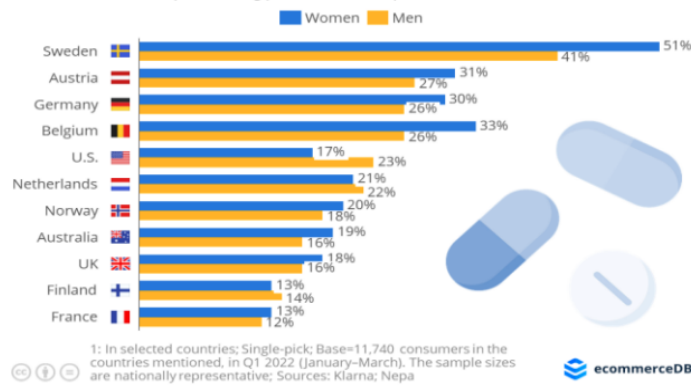
Germans tend to shop later in the day than before corona

Share of orders by time of day in total orders via galaxus.de



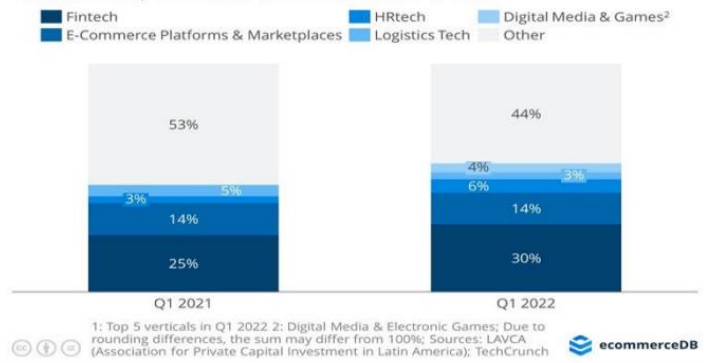
More than half of Swedish women buy pharmaceuticals online

Share of consumers purchasing pharmaceutical products online in Q1 2022¹



One in seven tech investments in Latin America went to eCommerce

VC investment by tech vertical¹ in % of total number of deals



Takeaways

- Countries should invest in the Circular Economy to ensure that modern production methods keep the environment's needs in mind.
- Companies must orient themselves to incorporate sustainability as part of Circularity and play their designated role in reducing harmful emissions and excessive wastage.
- Citizens must be encouraged to engage in conversations around sustainability practices and to hold companies accountable for their role in environmental preservation. A shift towards conscious consumerism should also be practiced, to reduce the excessive burden on production.

Recent Articles on the Circular Economy

Circular Economy: A Circular Economy entails markets incentivizing reusing products rather than scrapping them and extracting new resources. In such an Economy, all forms of waste, such as clothes, scrap metal, and obsolete electronics, are returned to the Economy or used more efficiently. This can provide a way to protect the environment and use natural resources more wisely, develop new sectors, create jobs, and develop new capabilities. Circularity is already part of many lines of work within UNCTAD, such as activities on tackling fossil fuel and fisheries subsidies. Resource circularity cannot be promoted in international value chains by promoting and enacting national rules. [Read More...](#)

Circular Economy Action Plan: The European Commission adopted the new Circular Economy action plan (CEAP) in March 2020. It is one of the main building blocks of the European Green Deal. The EU's transition to a Circular Economy will reduce pressure on natural resources and create sustainable growth and jobs. It is also a prerequisite to achieving the EU's 2050 climate neutrality target and halting biodiversity loss. The new action plan announces initiatives along the entire life cycle of products. It targets how products are designed, promotes Circular Economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU Economy for as long as possible. [Read More...](#)

Circular Economy: definitions and impacts: Transforming the linear Economy, which has remained the dominant model since the onset of the Industrial Revolution, into a Circular one is by no means an easy task. Such a radical change entails a significant transformation of our current production and consumption patterns, which in turn will have a substantial impact on the Economy, the environment, and society. This paper reviews the growing literature on the Circular Economy to improve our understanding of the concept and its various dimensions and expected impacts. Based on this review attempts to map the processes involved and their application in different sectors. The paper suggests that research on the Circular Economy is currently fragmented across various disciplines, and often different perspectives and interpretations of the concept and the related aspects need to be assessed. [Read More...](#)

Circular Economy and Agribusiness Development: The Circular Economy principle addresses the "take-make-waste" approach by designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. The closed loop concept is central to the Circular Economy, increasing a continuous flow of technical and biological materials in the value circle, keeping products, components, and materials at their highest utility and value while reducing waste to a minimum. Resources may be circulated through various routes, utilizing new technologies and creating new value chains and jobs. From production and its inputs to the final consumer, Circular Economy practices can be developed, leading from a linear flow of goods to a Circular flow that avoids pollution, prolongs material use, captures value from waste, and regenerate organic flows. In the agribusiness sector, two distinct cycles of Circular modes are present: technical and biological. [Read More...](#)

Circular Economy Action Agenda: Electronics
Electronics have transformed the way we live and work. Today's global consumer electronics market is worth an estimated \$1 trillion and is projected to grow. If current production and consumption modes continue similarly, so will our draw on natural resources and greenhouse gas emissions in the value chain. Electronics have already become the world's fastest-growing waste stream. The industry needs to become more sustainable and resilient. [Read More...](#)

UNIDO: Circular Economy
By and large, today's manufacturing takes raw materials from the environment and turns them into new products, which are disposed into the environment after use. It's a linear process with a beginning and an end. In this system, limited raw materials eventually run out. In a Circular Economy, however, products are designed for durability, reuse, and recyclability, and materials for new products come from old products. [Read More...](#)

<p>Cities and Circular Economy for Food: Few things are as interwoven with human existence and culture as food. At the most basic level, we need it to survive. Beyond sustenance, food can bring joy and is central to cultures worldwide. The current food system has supported a fast-growing population and fueled economic development and urbanization. Yet, these productivity gains have come at a cost, and the model is no longer fit to meet longer-term needs. Shifting to a Circular food Economy represents an attractive model with substantial economic, health, and environmental benefits across the food value chain and society. Read More...</p>	<p>Circular Economy Action Agenda: Food. The Circular Economy Action Agenda has been designed to accelerate the transition to a Circular Economy- and to have a better future for people and nature. It transforms existing knowledge into a collective agenda informing and mobilizing action. Our food system has seen some outstanding achievements in feeding the world's growing population, but we will be unable to sustainably support the global population tomorrow. We need to build a sustainable food system where the growing, eating, and disposal of food creates net benefits for the Economy, people, and environment. By applying Circular Economy principles to food system value chains, three objectives can be achieved to ensure food is produced more effectively. Read More...</p>
<p>A Circular Agriculture and agrifood Economy for Canada: Achieving Canada's aggressive growth target for agrifood exports, concurrent with making progress on the government's ambitions for a 30% reduction in methane emissions by 2030, net-zero emissions by 2050 and overall improvements in environmental quality indicators and food security means that more food will need to be produced with a smaller ecological footprint. While this is a tall order, it is not impossible. Can this growth ambition be squared with environmental goals? This sector significantly impacts water, soil quality, biodiversity, and climate. In 2019, agriculture alone contributed to 8% of Canada's GHG emissions. But, the Circular Economy model presents a vision for meeting the needs of an increasingly populous and wealthy global society within the safe boundaries of key ecological systems and processes. Read More...</p>	<p>AgroCycle- developing a Circular Economy in agriculture: Population growth and increasing consumption drive global food demand, with agricultural activity expanding to keep pace. The modern agricultural system is wasteful, with Europe generating some 700 million tons of agrifood waste yearly. The Agricultural Centre for Sustainable Energy Systems (ACSES) is involved in a significant research and innovation project on applying the Circular Economy across the agrifood sector. In the context of the agrifood chain, the Circular Economy aims to reduce waste while making the best use of the waste produced by using economically viable processes and procedures to increase their value. AgroCycle will address such opportunities directly by implementing the Circular Economy across the agrifood sector. Read More...</p>
<p>Closing the loop- the Circular Economy, what it means, and what it can do for you. According to estimates, only 1% of materials used in manufacturing processes remain 'in use' six months after the product is sold. Almost half of the world's top 100 companies have recently adopted a concept to ensure their materials remain in use. This transition towards a Circular Economy is a milestone in development because it redefines the process of product design, manufacturing, and consumption altogether. Read More...</p>	<p>The Circular Economy: What, Why, How and Where. The idea of the Circular Economy has two long strands, the first relating to the flow of materials through an Economy, and the second concerned with thinking about the economic conditions that might bring about such a flow. These two conceptual streams go back to the early days of the modern environmental movement in the 1960s and 1970s and have a subsequent symbiotic relationship. This paper looks at the theoretical framework that precedes the modern Circular Economy, and helps shape our understanding of the impact this transition is liable to have. Read More...</p>

<p>Critiques of the Circular Economy: This paper presents a reasoned account of the critiques of the Circular Economy and Circular business models. These critiques claim that the Circular Economy has diffused limits, and unclear theoretical grounds, and that its implementation faces structural obstacles. Circular Economy is based on an ideological agenda dominated by technical and economic accounts, which brings uncertain contributions to sustainability and depoliticizes sustainable growth. These critiques demonstrate that the Circular Economy is far less promising than its advocates claim. Circularity emerges instead as a theoretically, practically, and ideologically questionable notion. The paper concludes by proposing critical issues that need to be addressed in the Circular Economy, and its business models to open routes for more sustainable economic development. Read More...</p>	<p>The Circular Way for Leather, Wool, and Silk: While terrestrial ecosystems are crumbling under pressure from unsustainable production and consumption patterns, many companies that manufacture leather, wool, and silk clothing are adopting Circular business models and regenerative practices to diminish the environmental footprint of the clothes we wear. The tanning industry is known for the impact of its productive processes, significantly as the skins and hides are being transformed. The problems are most likely to be the use, in 80-90% of existing leather products, of chrome tanning, which is found to be one of the six most dangerous substances for human beings and the environment. Fortunately, there is no lack of companies and start-ups in the sector that are focusing on biomaterials to replace animal-based leather. Pinatex has developed and patented a non-woven fabric derived from pineapple leaves, while Italian company Vegea has manufactured a biomaterial with the same properties as animal leather. Read More...</p>
<p>Circular Economy in Latin American housing: Although the Circular Economy involves other principles, such as the regeneration of natural systems, the reuse or recycling of materials plays an essential role in reducing waste generation by giving a second useful life to elements that could be considered waste. Wood, metal sheets, bricks, and stones, among others, can be reused, bringing sustainability and efficiency criteria to the projects, helping to consolidate this concept that still has a long way to go. Within the Latin American territory, many architecture professionals have proposed to apply in their design and construction processes the implementation of strategies that collaborate with the use of resources by reusing, recycling, or restoring different materials and elements in search of satisfying the needs and concerns of those who inhabit the spaces. Read More...</p>	<p>The Circular Economy and how it can work for businesses: Businesses are the lifeblood of the Economy, but they're also one of the most significant contributors to waste. Could a Circular Economy be the answer? What does a Circular Economy mean in business, where growth is paramount? How do businesses reduce their impact on the environment without severely decreasing their bottom line? A Circular Economy is a systemic approach to controlling and reducing waste within manufacturing and business. The idea is to design products that can be reused, or recycled in some way, after which they can be cannibalized back into production so the materials do not end up as waste. There are many business benefits to changing from a linear to a Circular Economy, such as saving yourself and your clients' money or retaining staff due to less conscious quitting, regardless of the environmental benefits. Read More...</p>
<p>Beyond Recycling: Reckoning with Plastics in a Circular Economy: As the world considers addressing the growing impacts of the triple planetary crises of pollution, climate change, and biodiversity loss, many discussions point toward a Circular Economy approach, a much-needed solutions pathway. The term Circular Economy is routinely used in conversations and policy discussions that center on re-envisioning the full system of plastics and is increasingly becoming a popular topic in public discourse. However, there is ongoing confusion about the exact meaning of the term and its application in this context. The original concept, termed Circular Economy focused on two key</p>	<p>Consumers care about sustainability- and back it up with their wallets: A joint study from McKinsey and NielsenIQ examines sales growth for products that claim to be environmentally and socially responsible. Total US consumer spending accounts for over \$14 trillion annually and two-thirds of the US GDP. An essential subset of these spending goes on everyday consumer packaged goods (CPG), ranging from foods and beverages to cosmetics and cleaning products. The sheer size of the CPG sector- with millions of employees and trillions of dollars in annual sales- makes it a critical component in efforts to build a more sustainable, inclusive Economy. CPG companies increasingly allocate time, attention, and resources to instill</p>

<p>pillars. First, the protection of natural capital (and thus the minimization of resource extraction). Second, the elimination of externalized costs— i.e., 'externalities,' or harmful impacts from a material's production or use whose costs are paid by the public rather than those responsible for (and profiting from) those risks or harms. Over time, however, the use of the term 'Circular Economy' has strayed quite far from these original pillars, seriously undermining the validity of the concept in national and global policy discussions. Read More...</p>	<p>environmental and social responsibility in their labels. The results have been evident: walk down the aisle of any grocery or drugstore these days, and you're bound to see products labeled "environmentally sustainable," "eco-friendly," "fair trade," or other designations related to aspects of environmental and social responsibility. Most important is what lies behind these product claims- the contribution of business practices to achieving goals such as reducing carbon emissions across value chains, offering employees fair wages and working courses, and supporting diversity and inclusion. Read More...</p>
<p>8 ways the Circular Economy will transform how business is done: Circular business models will outperform traditional linear models in eight critical areas: for one, consumers' reason to purchase sustainable products and brands were founded as their intention to improve the environment, reduce production waste, and reduce their carbon footprint. Secondly, Circular organizations are projected to offer product-as-a-service, in which a customer pays for the use of a service over a limited time. The provider maintains ownership of the product and remains incentivized for its ongoing maintenance, durability, upgrade, and treatment at the end of its use. Thirdly, Circular products are projected to be available at a reduced cost. Moreover, recurrent income sources and greater resilience are other reasons the Circular Economy will redefine how business is done in the changing world. Read More...</p>	<p>5 Circular Economy business models that offer a competitive advantage Throughout history, many leading companies have failed to adapt to a changing competitive landscape and adopt new superior business models. Gartner optimistically predicts that by 2029, supply chains will not be allowed to produce waste, as customers and many governments will find it unacceptable. However, it is realistic to expect that during the 2030s, the Circular Economy will be not only the mainstream Economy but also the only Economy. Like born-digital companies disrupted traditional business models, we will see born-Circular companies disrupting born-linear models. Those needing to adapt must focus on the transition to Circularity. It will require abandoning current competitive advantages, writing off important assets, changing well-functioning supply chains, and investing in Circular business models. For example, ecosystem digitization will be a crucial advantage in a Circular Economy. Failure to adapt will result in born-Circulars becoming the new industry leaders in the 2030s. Read More...</p>
<p>Closed loop for Circular Economy: New polymer recycling strategy ensures high stability and complete recyclability: The ever-increasing generation of plastic solid waste has resulted in global plastic pollution on land and the oceans. Projections show that plastic waste will double in the next 20 years, causing further environmental problems. Large amounts of plastic waste are, at present, incinerated or deposited in landfills. This not only degrades the environment but also depletes valuable resources. In this light, recycling plastics such as polymers is a promising sustainable alternative for waste management. But this involves breaking chemical bonds between monomers (building blocks of polymers), which diminishes their overall stability and quality. Addressing this concern, researchers have developed methods to recycle polymers in a "closed loop" without losing these properties. However, these methods are complicated and expensive and require specialized monomers, necessitating further innovation. Read More...</p>	<p>H&M move into textile sorting could be a huge boost for Circular Economy: Circular Economy, recycling, reuse, rental-over-ownership. It's the buzz for 2023, and the movement picked up yet more momentum today, courtesy of global fast fashion retailer H&M. Its move into the business of textile sorting via a venture to deal with waste in the fashion industry represents a potentially very significant step. It's also the company's most prominent announcement after a raft of initiatives aimed at reversing the environmental damage for which fast fashion is a prime culprit. The latest step has seen the Swedish giant create a joint venture with recycling company Remondis to extend the life of about 40 million garments this year alone. The business is called Looper Textile Co. — a nod no doubt to the Loop system created in a Stockholm store to regenerate new garments from old — and will collect used and unwanted apparel for reselling to second-hand fashion companies and the recycling industry. Read More...</p>
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