Circular economy readiness:

the business case for manufacturers

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Content

According to the 2023 Circularity Gap Report[1], **the global economy is now only 7.2% circular.** This downward trend (9.1% in 2018, 8.6% in 2020) highlights the continued rise in the extraction and use of finite virgin resources and materials.

This executive summary examines the need and opportunity for manufacturers to transform to more sustainable operations, creating new opportunities and revenue streams that also reduce global consumption and waste.

Global economy is now only

7.2% Circular

Part 1:
Understanding the circular economy: circular business models explained

More and more, manufacturing companies are debating what is referred to as the circular economy, circular business models, or circular operations. These are transformative approaches where businesses create supply chains that recycle, recover and repurpose the resources used to create their products.

The Independent Policy Institute Chatham House describes the circular model as *'redefining the economy around principles of designing out waste and pollution, keeping products and materials in use for as long as possible.'*[2]

The linear approach

Currently, our global economy is predominantly linear. Natural, and finite, resources are extracted or mined and manufactured into goods, which, at the end of their usable lifetime, are often discarded into landfill. Typical examples include appliances, consumer electronics, fast fashion, IT hardware, smartphones and more. Historically, with little accountability for emissions, pollution and waste, the linear economy supports high profit margins and relatively affordable consumer goods for developed nations. Our planet pays the environmental and social price.

The circular model

In sharp contrast, a circular approach breaks that straight line with an alternative economic model based on the principles of reduce, reuse, recycle, and recover. Circularity maximises the lifetime of products and materials by designing out waste, extending usability, enabling easy repair and supporting reuse and recovering materials from waste streams.

A circular approach reduces both the demand for raw materials and the environmental impact associated with obtaining them. The 9R framework – Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover – can help to map the move from a linear to a more circular economy.

The diagram demonstrates the transition from a linear to a circular economy. On the far right, and the ultimate goal of circularity, is a transition towards smarter product use and manufacture – designing and manufacturing products with sustainability in mind. Whilst Reuse, Repair and Refurbish approaches can dramatically reduce the use of energy and production of CO, it is Refuse, Rethink and Reduce strategies that have the potential to truly transform manufacturing. These challenge the very existence of certain goods, the way they are consumed (for example, as a service, not purchases), and the ways design can make their use more sustainable.

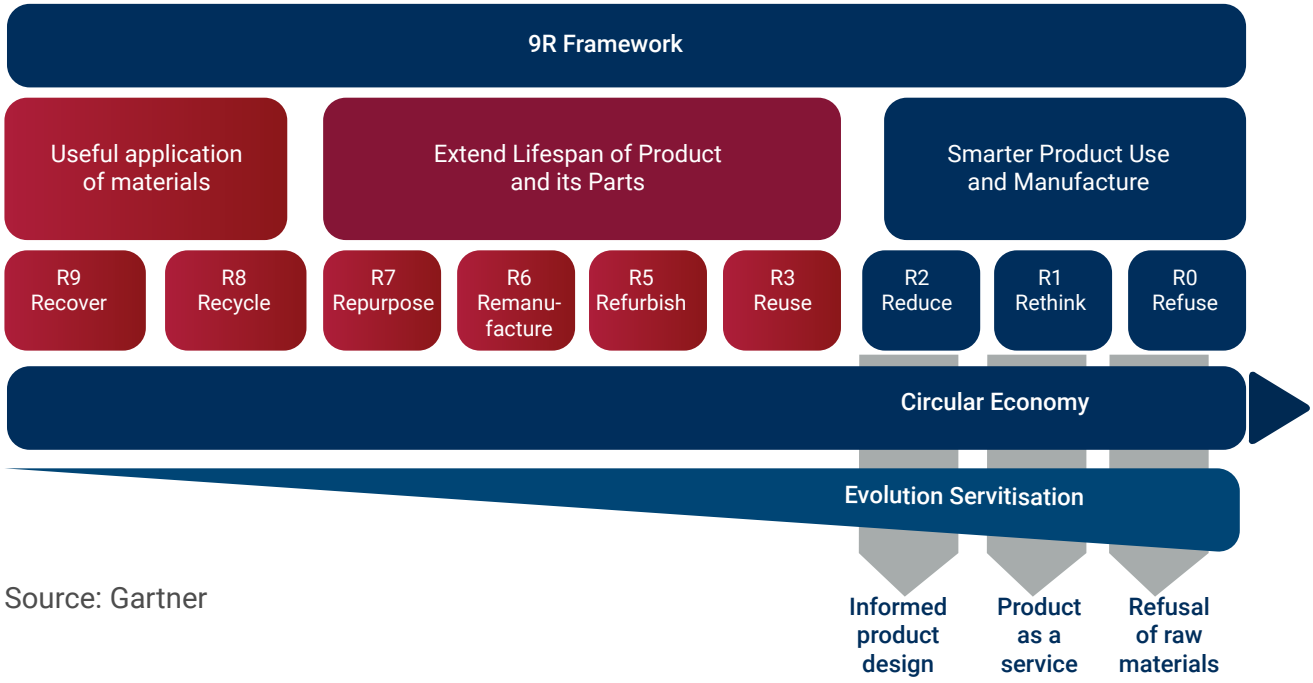
Circularity also promises to deliver substantial economic benefits. Scaling up reuse, repair, remanufacturing, and recycling creates millions of jobs and stimulates innovation. Capturing and reusing materials such as rare earth metals helps make the economy more resilient to global supply chain shortages and ensures the world has the materials to create the renewable energy infrastructure it needs.

According to a study by Bain & Company, **33% of executives expect their industry to be disrupted by circularity start-ups** that put products or materials back into the supply chain. Furthermore, **50% of executives expect circularity to become the "new normal"** for all companies in the next decade.[3]

This means that in the medium-to long-term, circularity will be a disruption, much like digital transformation is. Those companies who fail to act will fall behind because they miss out on the benefits that the circular economy creates.

Manufacturers have a golden opportunity to shift towards a different way of doing things – one that will help reduce carbon footprints, be less exposed to greater disruptions, and be part of a more sustainable future.

9R Framework and Linear vs Circular schematic



Source: Gartner

Part 2:
Circular thinking: what does it mean for manufacturers?

At current rates, humanity is consuming the equivalent of 1.75 times the Earth's natural resources each year.[4] Yet research suggests that, with a circular economy, we can fulfil society's needs with just 70% of the materials currently used.[1]

Shifting from profits derived primarily from resource consumption to generating profits from new practices requires a new manufacturing mindset. The future is a landscape that minimises materials, enables repair and re-use to extend product lifetimes, and markets products as a service, minimising obsolescence and recycling. Key themes include:

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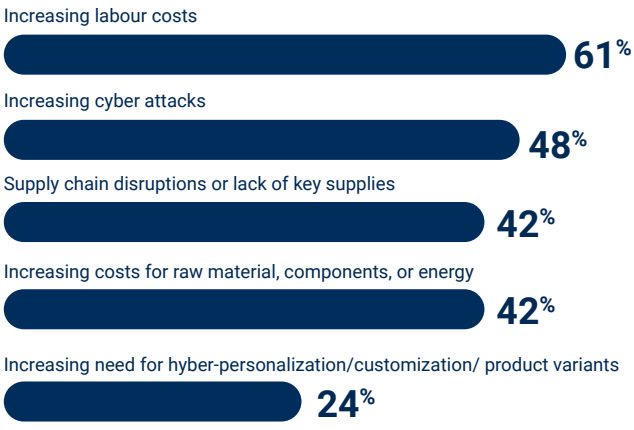
The need for resource efficiency

As the global population continues to grow, the continuation of our “excess culture” and linear economies (take, make, dispose) is placing immense pressure on natural resources.

According to a recent IFS / IDC Study, 42% of global manufacturers are worried about the lack of key supplies, with the same percentage expressing concerns about the increasing costs for raw materials.

A circular business model aims to minimise waste and extract more value from existing resources by promoting recycling, reuse, and remanufacturing. This approach reduces the demand for raw materials and improves overall resource efficiency.

Manufacturer’s top 5 business and industry disruptors



The need to reduce waste

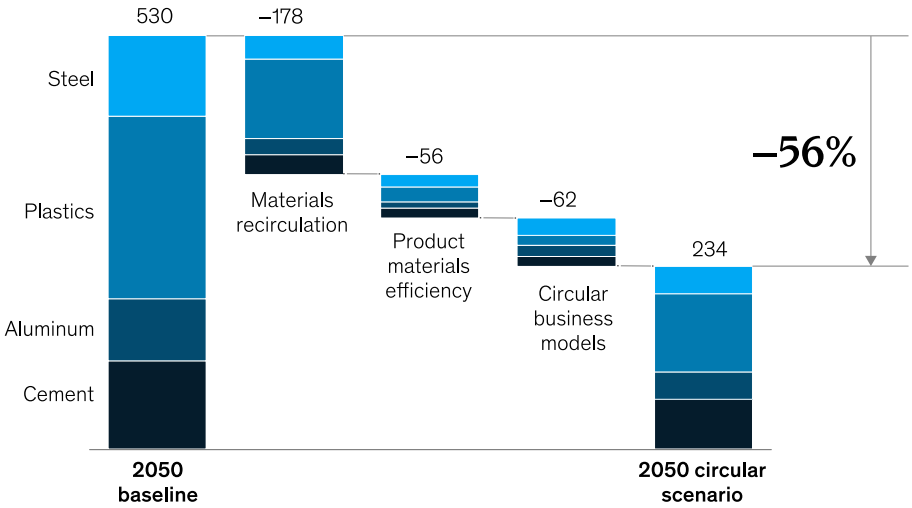
Traditional linear economies generate vast amounts of waste, leading to environmental pollution and negative impacts on ecosystems. The International Energy Agency reports global energy-related CO_2 emissions in 2022 reached a new high of 36.8 billion tonnes.

According to World Economic Forum data, **the manufacturing and production sector accounts for one-fifth of global carbon emissions and 54% of the world's energy usage.**

In a circular economy however, strategies like product design for durability, repairability, and upcycling can significantly reduce waste and the associated environmental burden. A recent study by McKinsey found that implementing circular economy practices in Europe by 2050 could cut emissions from steel, plastics, aluminium, and cement by as much as 56%

Circular oppotunities in Europe can cut 2050 emissions from steel, plastics, aluminium, and cement by 56 percent.

EU emissions reductions potential from a more circular economy by2050, million metric tons of CO2 per year



Source: Material Economics

The need to mitigate climate change

The circular economy aligns with climate goals by reducing greenhouse gas emissions. By decreasing the need for new production and transportation of raw materials, it cuts down energy consumption and emissions associated with manufacturing processes, thus contributing to climate change mitigation efforts. A study by Material Economics found that **transitioning to a circular economy could save as much as 296 million tonnes of CO^2 per year in the EU by 2050, out of 530 million tonnes in total, and 3.6 billion tonnes per year globally.**

The need for policy and regulatory support

Governments worldwide are recognising the importance of transitioning to a circular economy to address environmental challenges and promote sustainable development. Policy support, such as incentives, regulations, and funding, encourages businesses and industries to adopt circular practices.

To improve ESG transparency and accountability, governments, regulators, and industry bodies are starting to legislate for and implement new ESG and carbon emission disclosure requirements. Some of the key initiatives that are due to take effect include the European Union's Corporate Sustainability Reporting Directive (CSRD), the United States Securities and Exchange Commission's (SEC) proposed rules on climate-related disclosures, and the Task Force on Climate-related Financial Disclosures (TCFD).

Part 3:
Why now? Recognising a new regulatory landscape

The regulatory landscape and circular economy policies are rapidly evolving, with several new and emerging regulations in the UK, Europe and the US. These already are, or shortly will, have a profound impact on the ways manufacturers can operate, both in the near and long term.

The Waste (Circular Economy) (Amendment) Regulations 2020 is one example of policy driving manufacturers to move to a circular economy. According to Forbes, government agencies are playing an influential role in the growing momentum toward sustainable practices. For example, in the automotive sector, new directives, including the European Green Deal and the Paris Agreement, are forcing manufacturers to look for more sustainable solutions to meet stringent carbon-neutral targets. The sector faces the European Commission's proposed 55% cut in CO^2 emissions from vehicles by 2030, and a 100% cut by 2035, alongside carbon taxes, subsidies and incentives to encourage adoption of zero-emission electric vehicles.[10]

The European Commission's European Green Deal proposals will make sustainable products the norm in the EU, boost circular business models and empower consumers for the green transition. In addition, the Commission's Circular Economy Action Plan proposes rules to make almost all physical goods on the EU market more friendly to the environment, circular, and energy efficient throughout their whole life cycle from the design phase through to daily use, repurposing and end-of-life.[11]

Through regulation on digital product passports, a refresh of the eco-design legislation and energy labelling for smartphones, minimum standards for recycled content in products and a plastic tax, it aims to accelerate Europe's transition towards a circular economy.

UK regulation already in place includes rules on single-use packaging and a plastic tax. In the coming years, the government will also introduce a new extended producer responsibility system and a deposit return scheme for beverage containers.

$369 billion

In the US, in August 2022, the Biden administration signed the Inflation Reduction Act (IRA), a $369 billion subsidy scheme designed to incentivise US companies to transition to greener business models.[12]

The Right to Repair (France):

Under new EU proposals manufacturers will have to repair goods still under guarantee if that costs the same or less than a replacement. Consumers will also have the right to demand that firms fix their products, if they can still be mended, within 10 years of purchase, even if they are no longer under warranty. A repairability index will also rank five types of electronics and home appliances.

Material efficiency standards:

Two European Standards Organisations (CEN/CENELEC) have produced material efficiency standards that detail future eco-design requirements for, amongst others, durability, reparability, and recyclability of products, so introducing a new focus on material efficiency during the design phase.

ISO standards:

Two ISO standards are under development to address the circular economy. ISO/DIS 59004 is a framework for organisations seeking to implement a circular economy and identify opportunities for improvement, whilst ISO/DIS 59020 provides guidance on how to measure and assess circularity and develop sustainably.

The new need for public reporting: CSRD as a driver for change

The European Union's Corporate Sustainability Reporting Directive (CSRD) will require large and listed companies in the EU to disclose information on a wide range of topics, including their greenhouse gas emissions, climate-related risks, and social and governance policies. The directive also mandates that reporting is delivered in a digital format. Expected to come into effect in 2024, the CSRD will further raise the profile and importance of circular strategies, and so see companies moving to circular business models to reduce their (soon to be more visible) environmental impact.

Part 4:
Refurbished and remanufactured: a growing demand by consumers and businesses

The shift towards circular operations is increasingly driving the availability of, and the appetite for, remanufactured and refurbished products by consumers and businesses alike.

As consumers are becoming more aware of the environmental impact of waste, they are looking for ways to reduce their environmental footprint. Remanufactured and refurbished products offer a way of extending the life of products, reducing the need for and impact of manufacturing.

The technologies available to refurbish and remanufacture products are advanced and can operate at scale. These efficiencies mean that reused products cost significantly less than new equivalents, as the initial cost of manufacture has already been recouped.

Moreover, remanufactured and refurbished products are typically just as good as new products. Thoroughly inspected and tested for quality and performance, most will be sold with guarantees and warranties, giving consumers peace of mind.

A growing category

According to a study by Kearny, “refurbished,” a product category somewhere between “new” and “used,” is starting to grab ever more market share, and customers looking for affordably priced (typically 20–40% lower than a new equivalent) high-quality products are starting to take note.[12]

The market for refurbished electronics is growing fast. The refurbished mobile device market, for example, is expected to reach an estimated

$140 billion

by 2030, growing at almost twice the speed of “new” smartphones.

The Kearney survey revealed that 28% of more than 5,000 consumers across Europe and North America would prefer a high-quality refurbished product in comparison to a lower-quality brand-new product, with only 11% preferring a lower-priced but brand-new product.[12] Even business equipment manufacturers are seeing market demand for refurbished products such as second-life printers, driven by organisations keen to reduce their total carbon footprint.

Several factors are fuelling commercial interest in refurbished and second-life products.

They include:

Availability:

Supply chain bottlenecks have affected the availability of products, specifically caused by challenges in obtaining certain components such as semiconductors. This situation has had a cascading impact, leading to a decrease in the accessibility of goods within the market. This has led to an attitudinal shift towards used and second-life options, a typical example being the significant rise in demand for, and resale value of, used cars.

Brand loyalty:

More and more brands are diversifying their business models by offering remanufactured, refurbished, or re-engineered products. Customers have confidence and loyalty to the brands they recognise and trust and are therefore more likely to consider buying such second-life products from these names. Take Volvo Group, for example, the world's second largest manufacturer of heavy-duty trucks. Volvo Group's Circular Operations & Solutions remanufacturing centres have been able to halve emissions and use just 20% of the energy required for new part manufacture.

Quality and guarantee:

The methods involved in rejuvenating a product have made significant progress over time, and higher standards are in place to meet the demands of the market. Increasingly, remanufactured and refurbished products are coming with quality guarantees and return rights in case the product fails to perform.

The growth of servitised business models, where manufacturers provide product performance or outcomes as a service paid for by subscription, removes the burden of ownership. Provided the outcomes and performance are delivered to the agreed quality and uptime, the subscriber has no interest in whether products supplied are new, refurbished, or remanufactured.

Part 5:
Circular business models: the wider economic value

According to Gartner, "by 2029, the circular economy will be the only economy".[13] Specific opportunities include:

Economic growth and innovation:

A circular business model provides opportunities for manufacturers to create new revenue streams and capitalise on innovative products and services. Moreover, it drives sustainable practices, fosters the development of green technologies, and stimulates job creation in areas such as recycling, renewable energy, and eco-friendly manufacturing. According to Accenture, research shows that the transition to a circular economy could generate $4.5 trillion in additional economic output by 2030.[15]

Job creation:

Requiring a range of new skills and expertise, such as product design, repair, and recycling, the circular economy has the potential to create millions of jobs in the years to come.

According to the European Commission's Circular Economy Action Plan, applying ambitious circular economy measures in Europe can increase the EU's gross domestic product (GDP) by an additional 0.5% by 2030, creating around 700,000 new jobs.[14] If the right measures to promote a greener economy are put in place, the International Labour Organisation estimates 24 million new jobs will be created globally by 2030.[15]

Increased resilience:

A circular business model can make companies more resilient to disruptions in the supply chain and commodity price fluctuations, as well as reduced availability. It reduces dependence on finite resources and promotes localised production and consumption, which, in the long term, enhances economic stability and reduces vulnerability to global market shocks.

Cost savings:

A circular business model has the potential to create cost savings for both businesses and governments, creating less reliance on expensive raw materials and improving resource management.

Safeguarding rare natural resources:

The circular economy helps to ensure that valuable natural resources such as forests, habitats, water, air, minerals, and metals are extracted and used less and are applied to products and processes more carefully.

Reducing global emissions:

Currently, around 70% of global greenhouse gas emissions result from material extraction and use, especially for industry, buildings and construction, and agriculture.[17]

Yet studies show that with more efficient use of only four key materials (cement, steel, plastics, and aluminium), by 2050, circular economy strategies could reduce global greenhouse gas emissions by 40%.[18] By including circularity within the food system, total global emission reductions could reach up to 49%.

Part 6:
What next? the time to act is now

The European Environment Agency has published a report on enabling circular business models in Europe. The report identifies four main circular business model types that support the shift towards circularity:

01 **Ensuring products' longevity and durability**

02 **Access-based models (renting and leasing)**

03 **Textile collection and resale**

04 **Recycling and reusing materials**[19]

Transitioning to circular business practices will take time. And it is this very fact that makes it all the more important to begin the process of investigating and planning a business transformation.

Manufacturers with revenues simply locked to sales are not fit for the future. The days of just delivering an end product are long gone. Manufacturers face challenges, but also huge opportunities, by making the original product profitable multiple times, using returning cores as input for new, remanufactured, or refurbished goods.

Stakeholders must begin to understand, assess and quantify where circular opportunities lie, and how to start to embrace them with new business offers (for example, refurbishment, remanufacture) and the processes needed. In the first instance, organisations should consider how to:

01 **Identify your business risks:**
What problem are you trying to solve? Are you struggling to secure raw materials? To access international markets as regulations tighten? To retain market share because consumers are concerned about the waste you create? Your circular economy strategy should assess and address these risks.

02 **Identify the circular operations and economy opportunities available to your business:**
Could you redesign your product to reuse materials? Or build market share by becoming known as the manufacturer whose products last? Add services based on your product? Whether you are designing new products or packaging, think durability, recyclability and re-use to keep materials and parts circulating.

03 **Design out pollution and waste:**
Product design plays a fundamental role in opening up opportunities within a circular economy. This means designing products that are more durable and longer lasting from the outset, are more efficient in operation, and are easy to disassemble and repair, including access to spare parts.

04 **Enable reuse and remanufacturing:**
By using standardised parts and materials, and providing repair take-back programmes, manufacturers can readily facilitate reuse and remanufacture of their products for consumers.

05 **Increase the use of recycled materials:**
The ability to integrate more recycled materials in products will reduce the demand for rare materials, saving energy, reducing emissions, and conserving valuable natural resources.

06 **Collaborate with partners:**
To operate effectively, the circular economy demands close partnerships throughout the value chain. A manufacturer's waste or by-product could become a supplier's raw material. Ecosystem collaboration to plan and forecast material usage can maximise the whole-life value. By working with suppliers, retailers, and customers, manufacturers can develop innovative new ways to reuse, remanufacture, and recycle products.

07 **Understand your business operations and data:**
The latest cloud-based technology can provide vital insights, reporting and visibility to plan for the transition to circular business models. Enterprise Resource Planning software can provide a business-wide view of current operations, highlighting areas where changes can facilitate more sustainable practices. For example, IFS Cloud™, delivered by Platned, includes embedded capabilities to enable manufacturers to optimise planning, production and operations, and comply with rapidly emerging net zero regulations.

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About Platned

Platned is a Gold Services Partner of IFS, helping organisations unlock the full value of **IFS Cloud™, delivered by Platned**. We work with manufacturers worldwide to support their journey towards more efficient, sustainable and profitable operations.

Our expertise goes beyond ERP delivery. With complementary solutions such as **Platned Mahara** (automated testing for IFS Cloud™), **ParsaAI** (AI-driven invoicing and finance automation), **Platned Gateway** (flexible support and automation services), and managed hosting, we help customers reduce costs, mitigate risks, and stay ahead in a rapidly changing business landscape.

At Platned, we understand that manufacturers need technology that delivers insight, resilience, and adaptability. By combining our deep industry experience with IFS Cloud™, we enable businesses to transition towards circular business models, meet regulatory demands, and capture new growth opportunities.

Find out more about how Platned can help your business today:
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