How manufacturers unlock value from the circular economy

Why businesses can profit from sustainable processes

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Introduction

A circular economic model could not only contribute to a greener future at a time of climate crisis and reliance on natural resources, but strengthen market competition and benefit your business by supplying consumer demand for environmental solutions.

There is enormous potential for businesses to exploit the benefits of the circular economy. But there's a lot of messaging around it, which may be confusing. You may already have waste management systems in place, but is this the same as being an active member of the circular economy? And is the war on plastic that many retailers have declared a worthwhile circular economy strategy helping the environment, or just a tactic forced on them by consumers?

In this guide, we will speak to experts and examine circular economy manufacturing research, explaining what the state of play is today and what we need to do for the future. We'll also provide tips on how to share the circular economy message with other leaders in your company, in a language they understand.

What is the circular economy, and why is it good for business?

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 we discard.

The traditional linear economy creates waste through a model that flows as take, make, use, dispose. The circular economy eliminates waste through a cyclical model: make, use, return, recycle, reuse, make.

Linear Economy/Circular Economy

Circular economy business models are likely to be more common in the future. By 2029, Gartner predicts the circular economy to be the only economy, replacing wasteful linear economies. The analyst claimed that this was due to consumer and shareholder preferences shifting towards sustainability.[1]

"Organisations are under pressure to reduce the amount of waste they're producing – from consumers and governments alike," commented Steven Steutermann, managing vice president in Gartner's supply chain practice.[2] "The solution to this challenge is a shift towards a circular, waste-free economy. The supply chain will play a key role in this process."

[1,2] Gartner press release 'Gartner Predicts Circular Economies Will Replace Linear Economies in 10 Years' 2019

Many manufacturers have already joined the circular economy, according to the Sage/IDG whitepaper, *Discrete manufacturing in a changing world: leaping hurdles and identifying opportunities.*[3]

The report says that the vast majority of businesses see the circular economy as a net benefit to their organisation and predict it will have a positive impact on their business in the next two years.

96%

of British discrete manufacturers impacted by green manufacturing trends had adopted a circular economy strategy.

[3]Sage/IDC white paper 'Discrete manufacturing in a changing world: leaping hurdles and identifying opportunities' 2020

How can the manufacturing industry benefit?

According to the Ellen MacArthur Foundation, a charity that's working to accelerate the transition to a circular economy, the manufacturing industry could achieve from **10% to 15% cost savings** on direct materials required for production.

The circular economy can change the way manufacturers operate by 'designing out' waste in the design phase before a product is used. The former director of sustainability at clothes and grocery retailer Marks and Spencer, Mark Barry, says in the circular economy documentary 'Closing the Loop'[4], there's still a lot of work to do.

He says, "I think a lot of what people call circular today is just generally improved waste management. It's fundamentally thinking about producing something from the very beginning that can be circular, ensuring that the customer can see a real benefit from using it, and having practical interest in terms of reusing it and returning it to us.

"So, I think there's a challenge of genuinely satisfying customer needs. We cannot be satisfied until hundreds of thousands of companies, servicing hundreds of millions of customers, are doing circular.

"And as long as it remains in the lab and exploration, we're struggling. And the world around us is moving too fast to stay tinkering for the next 10 years. We need to deliver scale quickly."[5]

New commercial opportunities – generating new revenue and reducing costs

So how can manufacturers get out of a 'waste management' mindset and follow a 'circular economy' approach?

Instead of only thinking about the functionality and price of making products, manufacturers should think about the whole lifecycle of their product, maximising the usage of materials and cutting out waste.

Currently, many consumers still don't consider what happens to products after they've used them – it is assumed that at the point when it stops being useful, the product will be thrown out and replaced. Businesses design products to make manufacturing as easy as possible, which doesn't lead to sustainable use.

[4,5]Closing the Loop, YouTube, 2019

Refurbishment and remanufacturing

Refurbishing and remanufacturing can help manufacturers to compete at a lower price than their competitors without reducing quality. Industrial processing of used parts to bring them up to the same standard as new parts enables manufacturers to take advantage of cost savings.

Consider electronic equipment like smartphones and laptops. Manufacturers often offer refurbished equipment by simply collecting, fixing, and installing new software in models for consumers that don't need or decide not to upgrade.

Global industrial brand management company Barloworld rebuilds and repairs Caterpillar industrial equipment in Russia and South Africa[6], providing their customers with remanufactured Caterpillar components. This service benefits the customer as Barloworld derives maximum value from their assets, and means profitability doesn't end with the life of a machine or component.

David Nienaber, Operations Manager at Barloworld, says[7], "Once the component arrives here, we disassemble it completely, and inspect it. We determine what parts need to be replaced with new ones and which parts can be refurbished and reused again.

"Parts will then go through a process of cleaning, refurbishment, and then reassembly. After reassembly, the component will be tested, painted, and then it's good to go back to the machine like new.

"Through remanufacturing, we can reduce the cost of doing business, because we can give the customers components at a fraction of what it would cost to get a new one. When we remanufacture, it also reduces the load on raw materials, such as iron ore and steel, and what we can't reuse, we send through for recycling.

"So, this is a process that replaces having to get new equipment every time something breaks, that's the essence of remanufacturing."

Rebuilding components can use **50-60% less energy** and **save up to 60%** on the price of a new component.

[6,7]Closing the Loop, YouTube, 2019

Recycling

It's cost-efficient for manufacturers to recycle product components, ensuring that they reuse these in new products instead of using raw materials. The circular economy approach means manufacturers are finding smart ways to create products that are durable and subsequently recyclable while retaining profitability.

Manufacturers need to design products that are reusable and repairable and have the systems in place to support their customers with this.

BMW, for example, looks to combine waste prevention and high-quality recycling in one unified concept, working on solutions to make the processing of vehicle spare parts more resource-friendly. It's also devising guidelines for the recycling of materials that are no longer usable. This ensures optimal reusability – or for disposal according to the method that is least damaging to the environment.8

Daimler, the owner of Mercedes Benz, addresses the circular economy in its production processes from the outset. Daimler analyses the entire product lifecycle and submits vehicles to an environmental balancing process depicting material flows and the carbon dioxide footprint from raw material extraction, usage, and recycling.

Under 'design for environment (DfE)' guidelines, Daimler's vehicles are designed during the early development stage to be as resource-friendly and eco-friendly as possible in terms of carbon dioxide consumption, pollutants, and waste materials.

The interim target was to use 25% more renewable raw materials and recyclates by 2015 than in the base year of 2010. They exceeded this target with 39% higher usage of recyclates and 28% higher usage of renewable raw materials.[9]

Pharmaceutical company AstraZeneca works with external specialists to take a holistic approach to address waste. It looks for waste in its end state and evaluates how it got there. It assesses initiatives that address waste produced in distinct ways – production, on-site with employees and disposal.

AstraZeneca prioritises waste prevention and works to change its processes to reduce the volume of waste it generates. One example is solvent recovery systems, which allows the company to reuse solvents in its operations and minimise waste streams, reducing reliance on raw materials.

AstraZeneca also aims to maximise recycling, ensure the safe treatment of its waste, and promote responsible end-of-life disposal of its medicines. It also aligns with global packaging standards, introduced in 2016, which improve efficiency by defining standard pack designs and materials.[10]

[9]https://www.globalcompact.de/en/themen/Good-Practices/Umweltschutz/Best-Practice-Kreislaufwirtschaft-bei-Daimler-Kopie.php

[10]https://www.astrazeneca.com/sustainability/environmental-protection.html

Deconstruction, and designing products with the circular economy in mind

Nick Oettinger is the managing director and founder of the Furniture Recycling Group, founded in 2012. The business works with several leading hotel chains and retailers, recycling more than 1.5 million mattresses since its launch.

Initially focusing on recycling, the Furniture Recycling Group strove to take a problematic waste stream out of the landfill and recycle it into its parts. Now the business also focuses on circular economy principles as it looks to reuse rather than waste the material used in mattresses. In essence, this is a challenging task as currently, mattresses are made out of low-grade materials that can be split into 19 different material types such as steel, foam, cotton, or polyester.

From a circular economy perspective, a process of proper deconstruction makes sense, not only because of the environmental benefits, but because materials can be salvaged that has financial value.

Oettinger says, "Inside mattresses are things called shoddy, mixed and blended fibres. And you can't quite tell what goes into them – this is where we were getting exceptionally frustrated. We needed a circular economy way of thinking from them. If you don't know what a product like mixed fibres has in terms of components, how do you stand the chance of recycling it?

"We started banging on the doors of manufacturers and the mattress supply chain to ask, what's the stuff in these mattresses? And they couldn't tell us. It was quite surprising that we didn't know what the materials were. Or we knew what the materials were, but we didn't know the percentage blends that people were using.

"So, something that we're working very hard with manufacturers and retailers on is identifying the materials that are being put into mattresses so that we can make the best use of them when they come to the end of their useful life as a mattress."

Oettinger says manufacturers need to think about product lifecycles and design products to take account of circular economy principles. In particular, he says it is essential to design products that have value at the end of their useful life in terms of a commodity.

He says, "With mattresses, you have polyester, which is worth money on a secondary market. And you have cotton, which is also worth money on a secondary market. But if you completely mix the two into a mattress filling, then it has absolutely no value as a secondary commodity. So, the design principles need to take account and follow the money."

Other circular business models

Leasing
Leasing is a contractual arrangement that calls for the user of an asset to pay its owner for its use. Often we talk about property, buildings, and vehicles in this sense, but industrial equipment is also leased. The tyre company Michelin, for example, offers durable tyres that are rentable. Leasing agreements require manufacturers to maintain responsibility for sustainable products after they are sold, but also when they come back in.

Services based on performance
This business model retains ownership of a product and provides a service based on its performance outputs, such as data on availability, maintainability, efficiency, and reliability (which the Internet of Things (IoT) could measure). An example could be a washing machine – instead of the customer needing to own the washing machine, they would pay for the benefits that come from using it (i.e. the act of washing clothes).

Incentivised return
A business offers an incentive (usually financial) for the return of used products, such as electrical or electronic equipment. These products could then be refurbished and re-sold.

Asset management
Maximise the life of products and minimise the need for new purchases by tracking your assets, allowing you to decide what can be reused, repaired, or redeployed.

You could reuse your assets as part of an asset-sharing platform, where you contact other firms to share assets you can't justify the expense of buying.

Collaborative consumption
The rental or sharing of products between members of the public or businesses, often through peer-to-peer networks, is a way to reduce waste. One example is car-sharing services available for people who don't need to spend money on a car.

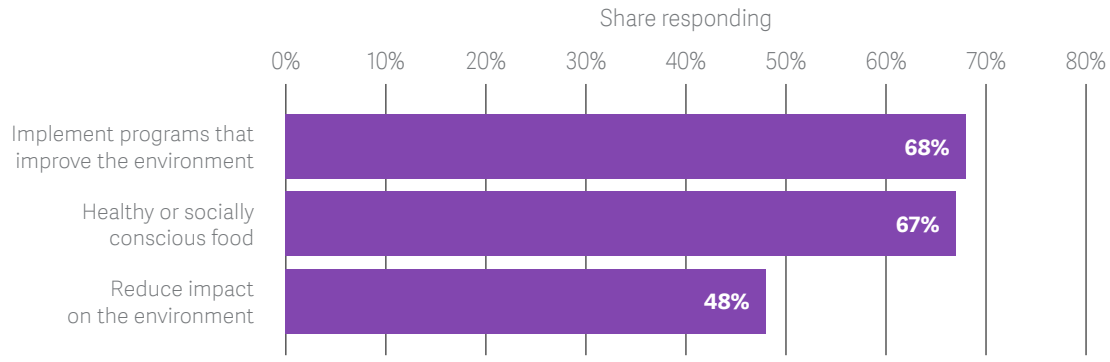
Food and the circular economy

The current food system has supported a fast-growing population, fuelling economic development, and urbanisation. However, the productivity gains have come at a cost due to the linear nature of food production that extracts finite resources. The current food production model is wasteful and polluting – harming natural systems.

According to the Ellen MacArthur Foundation[11]:

- For every dollar spent on food, society pays two dollars in health, environmental, and economic costs. Half these costs, which total £4.7 billion each year globally, are due to the way we produce food.
- The agrifood industry is responsible for a quarter of greenhouse emissions globally, degrades the natural resources for which it depends, and pollutes air, water, and soil.
- The equivalent of six garbage trucks of edible food is lost or wasted every second.
- In cities, less than 2% of the valuable biological nutrients in food byproducts and organic waste (excluding manure) is given value.
- The costs are a direct result of linear modern food production. Even water resources are finite as they need to serve exponentially more people and uses. Many people don't have a reliable drinking source.
- The report "Cities and Circular Economy for Food"[11] also states that current food production methods are harming people's health by the way we produce food and deal with its byproducts. By 2050, around five million lives a year – twice as many as the current obesity toll – could be lost as a result of current food production processes.
- There is evidence that consumers consider health and sustainability issues when purchasing food, according to research from Nielsen[12]. In 2017, 67% of US consumers said they were prioritising healthy or socially-conscious food purchases this year, while 68% of consumers were looking for brands that were implementing programs that improved the environment.

Importance of health and/or sustainability issues when making food purchasing decisions in the United States as of 2017*



Year ended July 29, 2017. Source: Nielsen.

[11]"Cities and Circular Economy for Food", Ellen MacArthur Foundation

[12]Nielsen, 2018

Why does this matter to a food manufacturer, and what can they do?

Global supply chains are being affected by agricultural changes such as declining soil fertility. Iowa State University conducted a study of 82 sites in 21 counties which showed that in the 50 years from 1959, soil structure and levels of organic matter had degraded while acidity had increased.[13]

Also, a growing population and regulatory requirements are forcing food and beverage businesses to make changes in how they work.

Through shifting to a circular economy for food production, we could see massive economic and environmental benefits across the food value chain and broader society.

For food and beverage manufacturers, embedding circular economy principles means they will want to stop wasting food and therefore preserve the value of resources such as raw materials, water, and energy.

Food and beverage businesses could do this by:

Building better manufacturing processes
Ways to minimise food waste include optimising manufacturing processes through better technology and training your workforce. Companies could also recycle food that would usually be wasted back into the production line, or create new products with leftover byproducts and ingredients.

Companies could look at putting in place regenerative approaches to food production, ensuring that they cultivate food in a way that enhances, rather than degrades the environment. Regenerative agriculture focuses on topsoil regeneration, which could include recycling farm waste, cover cropping, crop rotation, and mixed farming.

Design and market healthier food options
In the circular economy, you can look at changing food design and marketing to ensure food production processes are more efficient and effective. For instance, plant-based proteins require less natural resources, such as soil and water, than their animal counterparts.

According to PETA, it takes nearly 20 times less land[14] to feed people a plant-based diet than it does to feed meat-eaters, as crops are consumed directly instead of being used to feed animals, which also needs land.

Changes to make food more circular rather than linear will need collaboration between food manufacturers and the rest of the food value chain.

Redistribute non-sellable food
Across the supply chain, food losses seem to be inevitable as food and packaging are easily damaged as they go across land and sea. Yet much of this food is still edible, even if not necessarily suitable for sale. Food and beverage manufacturers might want to find alternative channels such as food donation partners and markets, to redirect this surplus food.

Recycling animal byproducts
Roughly 50% of an animal is considered inedible by Americans. Rendering is a form of recycling that has been around for a long time and can reclaim the unused meat, bone, and fat for products such as pet food and biofuels. The manufacture and trade in rendered products are already an essential component of the agricultural economy of the US.

For example, biodiesel production reduces fossil fuel dependence and use. Rendered protein products can be used for fertiliser or as a soil conditioner, providing an alternative to chemical fertilisers.

Using environmentally friendly packaging
Food and beverage manufacturers could make more use of sustainable packaging – think bio-based recycled plastic or reusable transport and product packaging, for example.

[13]Iowa State University, "Fifty years of agriculture soil change in Iowa, 2010"
[14]https://www.peta.org/issues/animals-used-for-food/meat-environment/

Educating food and beverage businesses about the circular economy

Martin Leeming is the CEO of Trakrap, a company that produces end-of-line packaging machinery for food manufacturers, supplying British grocery retailers. Specifically, this is the packaging used to transit from a food manufacturer to the grocery retailer – such as tray and shrink wrap holding a batch of tins or cans.

For more than 15 years, Trakrap has worked on ways to make packaging more sustainable, together with minimising the amount needed to protect and display products. The company has built a system that uses a bespoke film to wrap products with or without trays. There is no requirement for heat and a vast reduction in the amount of corrugate needed.

Leeming says, "The principle for us was that it has to be more environmentally friendly. It has to cost less, too. And the way to achieve that is to use less of everything, less energy, less plastic, less cardboard, and that way you can deliver on both fronts."

When asked if this is why food manufacturers want to do business with the company, Leeming said, "I feel it can be misdirected (interest in the company). Retailers are driving an agenda which is not necessarily in line with the circular economy or sustainability."

Leeming explained that supermarkets are being pressured by a 'war on plastic,' which isn't necessarily helping climate change, and is more about public pressure.

Plastic is a versatile material that keeps food fresh and protects it. But when plastic gets out into the environment, it can be very harmful to wildlife precisely because it doesn't break down.

But from a carbon footprint and climate change point of view, it's very effective for the same reason – it doesn't take much energy to make it and doesn't break down, so it doesn't release its carbon back into the environment.

On the other side of the coin is cardboard, which is very intensive in terms of energy to produce. And when it's composted, it releases its carbon back into the atmosphere. But nobody has a problem with it being out in the environment because it doesn't harm animals.

That said, Leeming said there is a tremendous amount of confusion about what we're trying to achieve globally, whether it's through the circular economy or sustainability. What are we reacting to?

He said, "A lot of [the war on plastic] is driven by the customer perception of doing the right thing. So, this has caused huge amounts of confusion in packaging for food manufacturers and supermarkets who want to do the right thing, but are not sure what the right thing is."

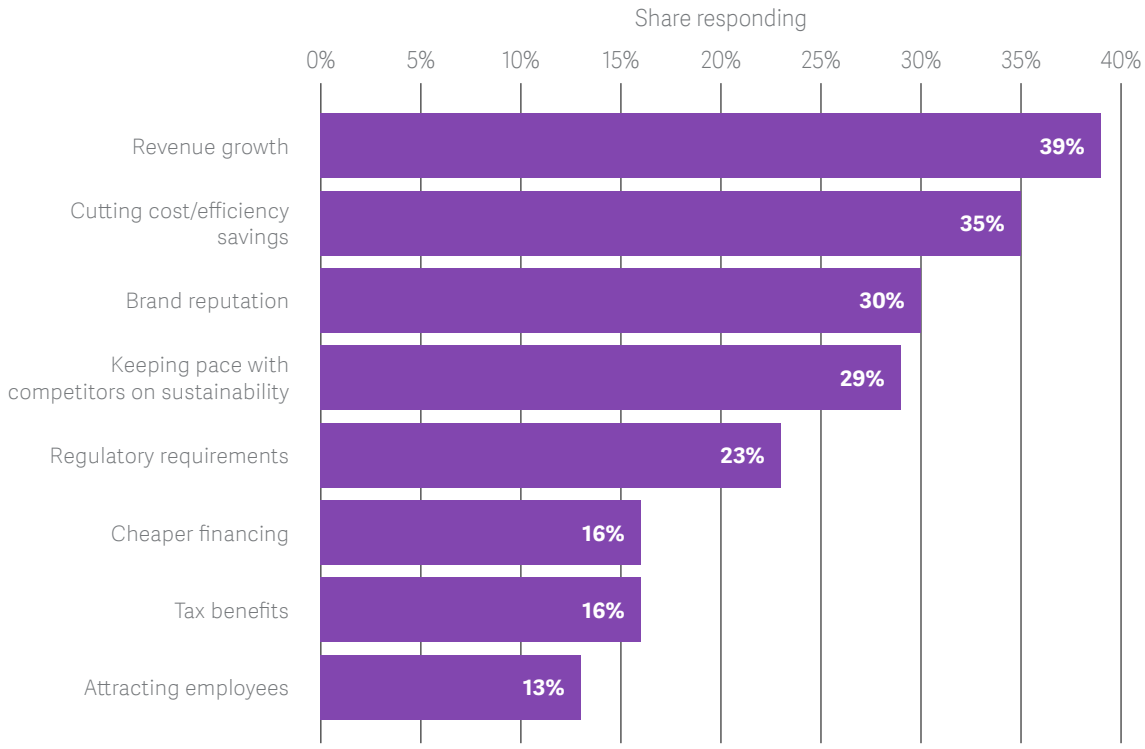
What's the solution? Martin Leeming says: "We have to start being a bit clearer about the circular economy, sustainability and climate change as being the three big objectives, and where plastic fits into that.

"Plastic needs to be in a circular economy where it never gets out into the environment and used in a way that reduces its carbon footprint. There are billions of packs being transported into supermarkets every year, not millions. So, it's a big opportunity both to address climate change and to improve the circular economy."

The circular economy contributes to business growth and sustainability

Key factors driving the adoption of circular economy practices include the ability to increase revenues and reduce costs. Other drivers are more energy efficient practices, and advances in productivity, efficiency and resilience. Manufacturers also feel that being greener enhances their brand image.

Most important factors for corporate sustainability among finance executives in the United States as of 2018



Additional information: 210 respondents. Source: ING-DiBa.

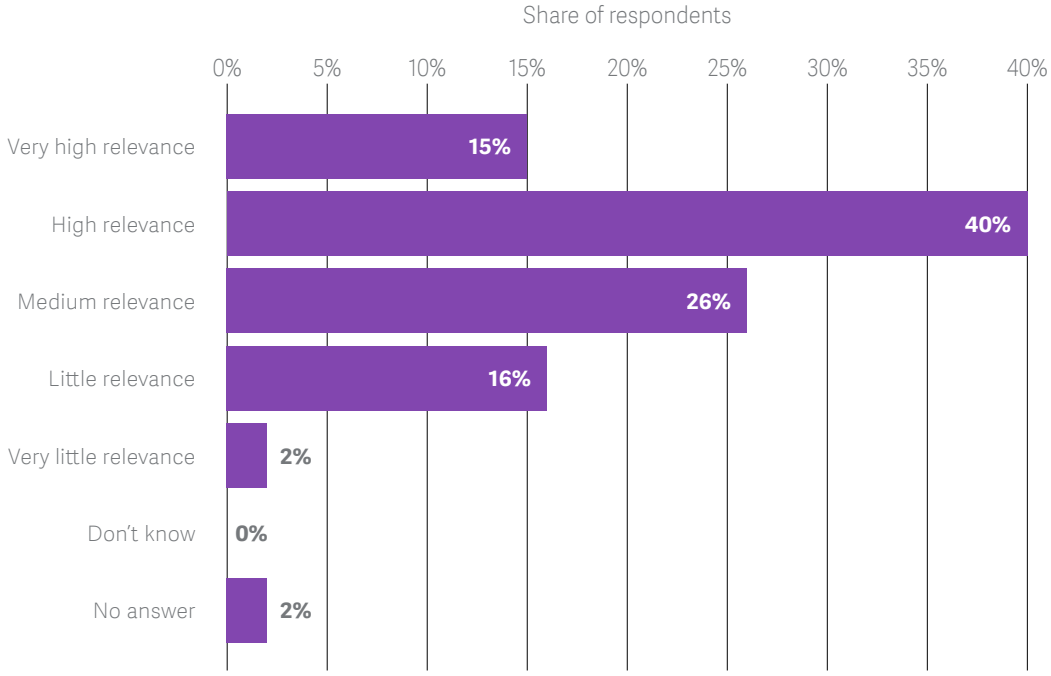
Alongside these business reasons, you may also be getting pressure from customers and regulatory bodies to do more sustainable business. According to the Sage/IDG research, 24% of these businesses want to minimise waste to landfill, while 32% want to cut natural resource and energy use.

Interestingly, lowering carbon footprint-related costs was more of a focus for UK companies (40%) than North American firms (24%) that took part in our survey. Indeed, only 35% of EMEA businesses and 38% of Australian ones said it was the factor that drove them to pursue a circular economy strategy. These variations are likely to be down to political uncertainty and change across different regions, and are in line with respective governments' interests in improving the carbon footprint.

It's also important to note that financial executives believe that enhancing the brand image of their companies is an essential factor, and it's true that the long-lasting relationships you can build through trust can be valuable.

According to research by Statista[15] using figures from the Chartered Institute of Logistics and Transport, 55% of respondents who worked in logistics for at least two years felt that sustainability has high or very relevance as an external influence for their company.

How do you rate the relevance of sustainability as external influence for your company?



Sources: Statista Expert Survey, Chartered Institute of Logistics and Transport. Statista 2019. United Kingdom; February 15 to April 28, 2019; 62 respondents.

[15]Statista, 2019

Many of your customers will be savvy about the influence of sustainable businesses on the environment, and – thanks to the availability of information – they'll be able to find out if you aren't following sustainable principles or looking to reduce the environmental footprint of your products

Industrial manufacturing is arguably one of the largest emitters of CO2, manufacturing expert and co-founder of the MIT Smart Customisation Group Frank Piller comments, along with transport and energy sectors. It has an average operational equipment efficiency of roughly 60%.

"Manufacturers can achieve significant climate change impact by making their industrial systems a little more efficient. It would be much faster than changing consumer behaviour, which is much more difficult to do," says Piller.

Protect against resource shortages

By reducing the materials you need for production, you can reduce your exposure to rising and volatile resource prices – think of costs related to fossil fuels and metals, for example.

Businesses stand to improve their customer offerings and relationships. They can gain new efficiencies by driving down waste in the manufacturing supply chain and customer sites. And there are significant cost savings to be made from adopting more environmentally friendly practices, which is why global manufacturers are willing to pay the price for change.

The technology of the circular economy

According to the United Nations Industrial Development Organization: "Industry 4.0 bears enormous opportunities to enable a circular economy in which end of life products are reused, remanufactured and recycled.

Industry 4.0 is a paradigm shift from centralised to decentralised smart manufacturing and production and refers to the computerisation of manufacturing.

Increasingly, companies are applying innovative solutions, including through the "Internet of Things" (IoT), cloud computing, miniaturisation, and 3D printing that will enable more interoperability and flexible industrial processes and autonomous and intelligent manufacturing."

Let's look at some of these technologies in more detail:

The Cloud
Manufacturers take advantage of cloud solutions, with software managing aspects such as system infrastructure, operating system, database, and applications.

The Internet of Things (IoT)
Through the IoT, you can now connect products you develop to the Cloud, analyse performance, and collect usage data. You can monitor and analyse products at a distance – creating happy customers by building products that are long-lasting and durable, which can reduce waste. Also, circular strategies such as recycling can be made more efficient by using data.

Artificial intelligence and automation
AI and automation could accelerate the transition towards a circular economy at scale in three particular areas: product design, operations, and infrastructure operations. For instance, AI offers the development of new products through machine-assisted design processes, the speeding up of prediction analysis and smart inventory management, and improved remanufacturing and recycling.

Robotics
Human error tends to create product errors in the manufacturing process. By using robots in a growing number of applications, you can increase yield, reduce waste, and extend the life of a product.

3D printing
With 3D printing you can quickly produce spare parts on-demand, which can extend the life of products or equipment, as well as reduce the need for stock.

What to watch out for

It's worth keeping an eye on:

Traceability

Technology enabling traceability would enable you to measure, track, and locate products and other materials with more precision allowing the better management and allocation of resources.

Traceability provides you with:

- Real-time visibility into the status of all processes.
- Automatic notifications that allow your business to be more informed, allowing you to react to events such as non-compliance or demand triggers.
- The ability to report and share product and materials data with your suppliers and customers, allowing them to understand where materials came and where they went.

Through the visibility afforded by traceability, you can have an operation ready for the circular economy. It's evident that to take advantage of the circular economy fully, you need effective ways to track and trace materials, components, and products through a system – from manufacture to end of life.

Blockchain

Another technology that you may want to investigate as part of your circular economy strategy is blockchain, as it can provide the trust and transparency on the products you buy and who you buy from.

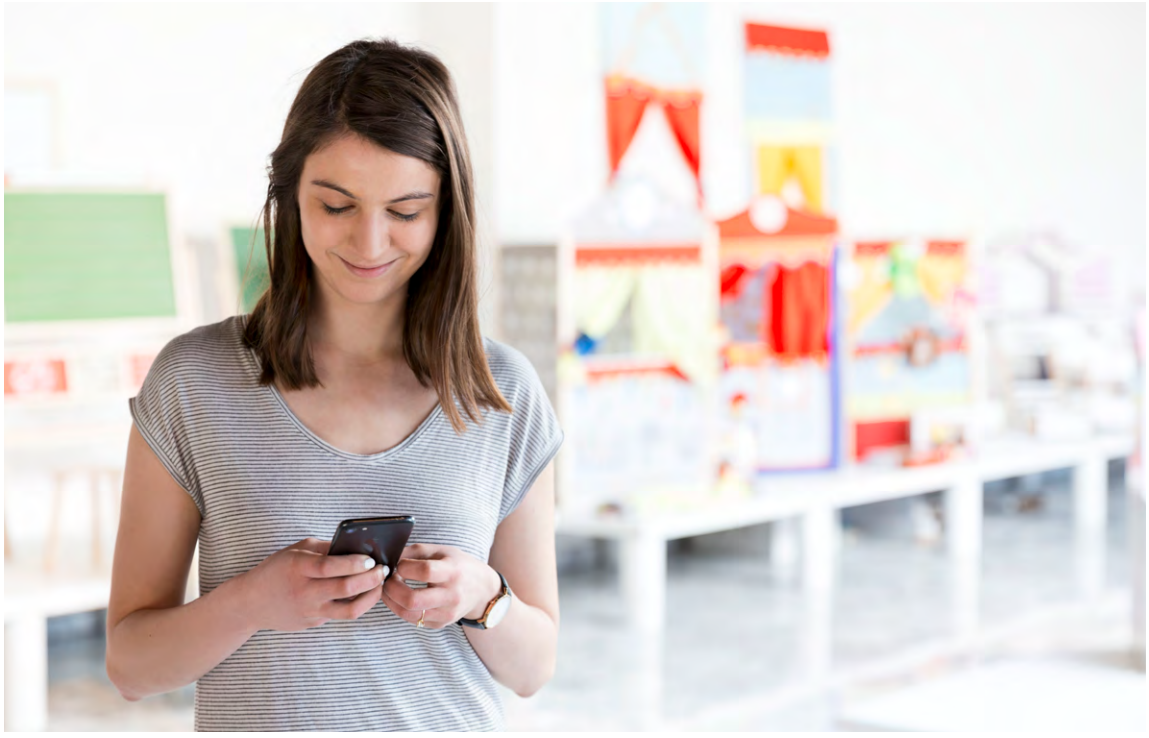
Blockchain is a foundational technology for the development of transparent digital supply chains, offering an immutable record of transactions that verifies the origin of products.

Bioplastics

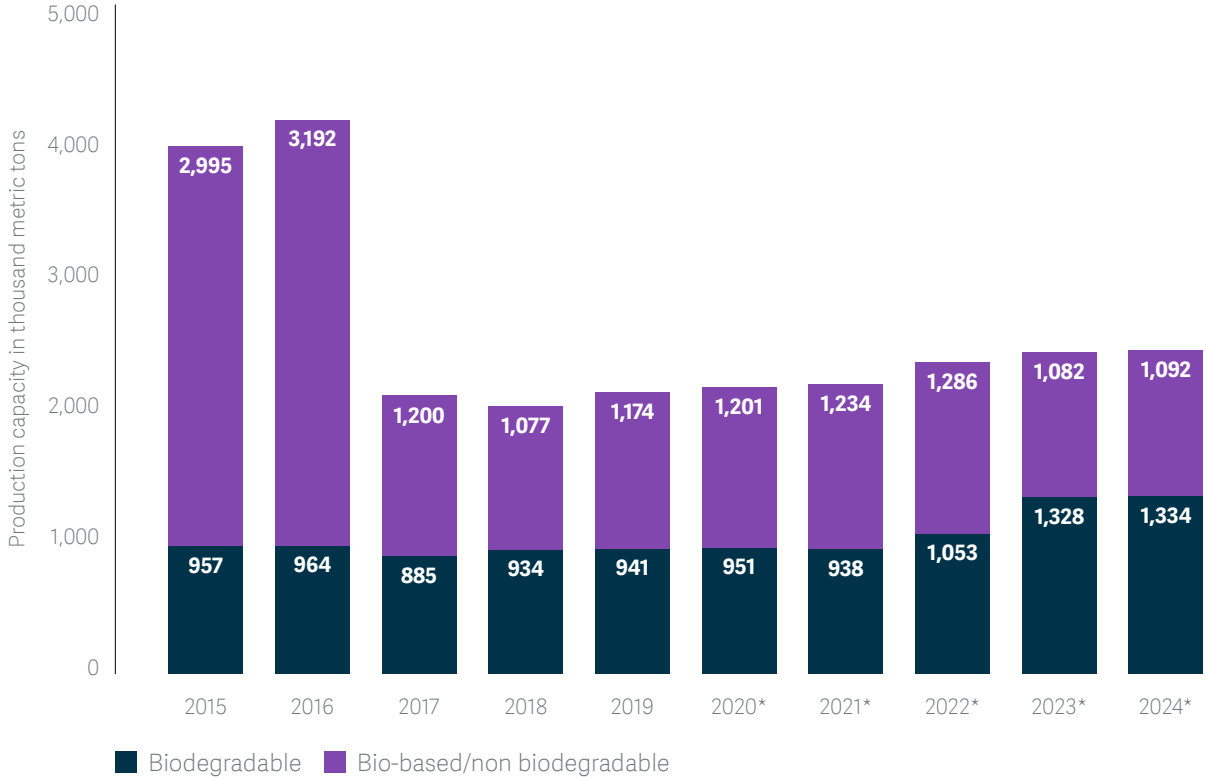
The "biologisation" of industrial manufacturing could be the next big wave of Industry 4.0, where you use bio-composable products and materials that go into the products.

Bioplastics, for example, is a fast-growing sector of the plastic industry, where plastics are made of renewable biomass materials such as corn starch and vegetable fats (bio-based), or able to break down entirely via a natural process (biodegradable).

In 2019, the global production capacity of biodegradable bioplastics was 941,000 metric tons, and the production capacity of bio-based/non-biodegradable bioplastics was 1.17 million metric tons.



Production capacity of bioplastics worldwide from 2015 to 2024, by type (in 1,000 metric tons)



Sources: Plastics News*; nova-Institute; European bioplastics, January 2020.*

Bioplastic manufacturing needs the use of advanced biorefineries, which uses chemistry to convert renewable resources into sustainable chemicals, materials, and fuels. Biorefineries maximise the use and value of renewable materials and exploit all its elements, recycling secondary products and wastes into valuable products, often using byproducts that fuel the production process.

Far more accessible to businesses would be the use of compostable plastics, which allows you to divert organic waste from landfills and instead of incineration, choose organic recycling.

Understanding customer demand

Manufacturing expert Frank Piller says manufacturers still produce too many unwanted goods and cannot predict what the market wants. If companies could understand customer demand by better analysing data, they could better predict demand. That would help them drive down product wastage, he says.

As Industry 4.0 advances, there will be much closer collaboration between product design and the development of manufacturing systems, he says.

Additionally, connected smart products will yield data that will impact product recycling and reuse. For example, data from a product's digital twin (a digital replica of potential and actual physical assets) can communicate whether an item or component needs to be refurbished, replaced, or recycled.

It is here that Piller already sees individual companies leading the way. For example, he recalls the CTO of SKF, a Swedish manufacturer of bearing systems, telling him that the company once had the mantra: "designed for quality." A bearing is a cheap product, but if it fails, an entire wind turbine, for example, experiences significant downtime. In the past, the company would over-engineer the product with additional safety layers, to dispose of this risk.

After introducing predictive manufacturing and maintenance, however, the company changed its mantra from "designed for quality" to "designed for prediction." Predictive technology now means the company doesn't have to over-engineer the product. It knows how customers are using its products and has the data it needs to be able to reduce wastage and downtime.

> "I see a powerful link with this type of thing and the circular economy. It's not just about using less water or energy for manufacturing."
>
> – Frank Piller

Transforming your business for the circular economy

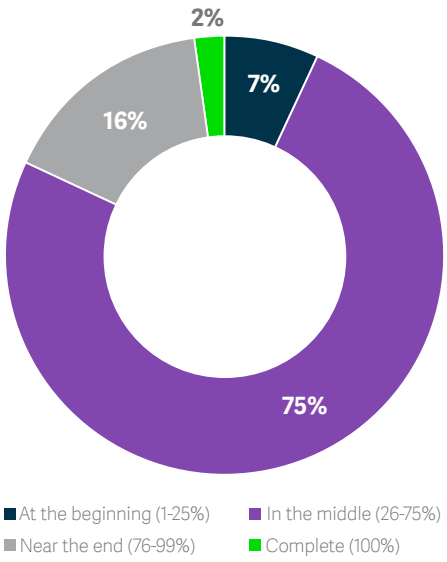
There are clear benefits in joining the circular economy as a manufacturer, and the enthusiasm is certainly there. However, our research says that 65% of British discrete manufacturers (77% globally) will need to undertake substantial transformation to take full advantage of it.

How complete is your circular economy transformation?

In the UK, three quarters of companies are in the middle of transforming and just 2% are completely transformed.

The vast majority of UK respondents see the circular economy as a net benefit to their organisations, and they see it as having a positive impact on their business over the next two years. Very few see a downside, even though most (65%) said they face undertaking substantial transformation to take advantage of it.

65% **of firms face undertaking substantial transformation to take advantage of the circular economy**



Offering added services (servitisation)

To make the most of the circular economy, businesses can expand their business models from merely selling products to providing resource efficiency-related services for customers.

In the past, moving towards a circular economy has been about reducing waste to save money. Now, it should be about creating commercial opportunities to increase revenues by bringing new and more resource-efficient services to the market – 'servitising' your offerings.

Servitisation means integrating your products with potential new services, and adapting your business models to offer additional value on top of what you make. Servitisation can increase customer loyalty and provide more stable revenue streams. One example of a high-profile company offering a circular repair model is LG, which provides a service to fix any of their goods, improving brand loyalty.

There are three levels of servitisation which manufacturers should think about:

1. **Level one:** Offering parts or consumables.
2. **Level two:** Getting involved in scheduling and performing maintenance and monitoring on the equipment that they sell.
3. **Level three:** At the most advanced level, the manufacturer goes to the customer and offers to help with products and solutions. Rather than charging or selling directly, it may involve a risk and revenue-sharing agreement.

Closely linked with digitisation and Industry 4.0, servitisation gives businesses in the circular economy new opportunities to expand their product lines with services and solutions. These include attractive add-ons, such as implementation, maintenance, upgrades, and product lifecycle. It also creates new billing and financing options for customers.

These help them to shift their capital expenditure (CapEx) to operational expenditure (OpEx), which is more beneficial when it comes to income tax.

Servitisation helps customers that want to compete with larger ones by not having to invest upfront. And as for the manufacturers themselves, servitisation offers a range of financial benefits. According to the leaders Sage/IDG surveyed, these benefits include share of wallet (72%), long-term contracts (58%), and steady cash flow (57%).

Most US manufacturers (87%) currently offer intermediate-level services, such as product repair, condition monitoring, field service, and customer help desks.

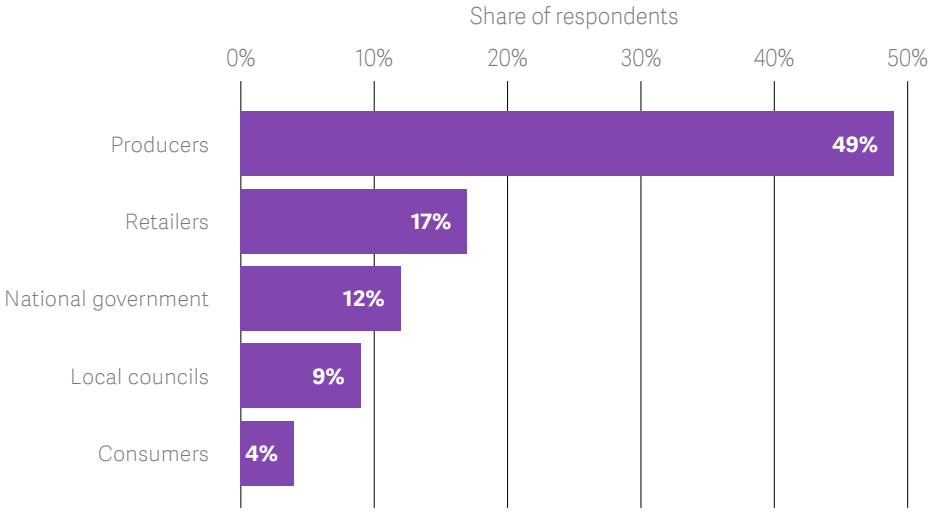
Making the circular economy argument

Think about where you can see business opportunities in doing the world a favour – the technology is now there for you to change your business models, so it seems a real waste to ignore it.

Although you may already be looking to implement circular economy principles, it may still be a challenge to educate the broader business about the business benefits. Many leaders in our research felt there is a lack of customer or market understanding of the value the circular economy provides.

However, it's important to note that almost half of the public at large believe responsibility of products and packaging lies with producers.

Attitudes to who should have most responsibility to making improvements to sustainability of products and packing in the United Kingdom (UK) in 2017



Statista 2020. United Kingdom; September 21-23, 2017; 2,057 respondents; 18 years and older.

When you're not busy adapting supply chain practices or balancing sustainability aims with the bottom line, you need to find time to communicate your circular economy business message internally and externally.

To help, here are some tips to effectively communicate and present circular economy ideas:

1

Understand who you need to influence

You need to understand who in your business you need to educate and influence about the circular economy. Getting your manager on-board first is a good start. But you will need to do some detective work with other people in the business.

Make a list of the names and explore what their objectives, priorities, and motivations are. What is their agenda, and what challenges are they facing? What do they need to be successful, and how can the circular economy help?

People in different departments will have different priorities – you will need insight into senior management, operations, procurement, innovation, and marketing functions' understanding of the circular economy.

2

What does the circular economy mean for your business internally and externally?

The circular economy has become mainstream, and many positive messages are coming out from businesses, governments, and trade/professional bodies. You need to ensure the relevant people understand this.

Your business may already have corporate purposes, strategy, values, and commitments which the circular economy can support. For example, you may have environmental and social targets you need to meet or benefits you want to protect, such as designing out waste and pollution.

3

Understand what circular economy strategy you need to implement

As examined in detail, the circular economy can bring significant benefits to your business by **bringing in new customers, increasing profits, and cutting costs**. You can also beat the competition when it comes to innovation, brand reputation, and sustainability.

Look for practical solutions to problems that already exist, and new opportunities that you wouldn't get with a linear economy. Make sure you understand what ideas could help with your existing challenges and opportunities, and highlight the benefits of new approaches and the downside of current ones.

Learn from the success of others. Many businesses, both large and small, across many industries, have adopted circular economy principles and strategies. Look at case studies and take the information and insight you need. Build a circular economy story by identifying the shortcomings of a linear economy and the value you can create, building an argument on why you need to change, and addressing any misconceptions people may have.

When it comes to activating a circular economy strategy, start small and move quickly by developing trials and pilots to prove the benefits of your circular economy strategy.

For manufacturers, the future is circular. By reducing waste through material and energy use in manufacturing products and services, your business is capable of reducing costs and reaching challenging sustainability aims through the circular economy.

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