

Beyond supply-side action

Circular business models

Circular thinking is a great potential for business development. How can companies implement circular business models? Examples of diverse models show how they can promote sufficiency to customers.

By Laura Nießen and Nancy Bocken

The concept of a circular economy has gained increasing traction in the past decade, with governments, research and business taking up the idea hoping to bring about environmental sustainability, job creation or economic growth. Circular thinking has origins in the field of industrial ecology and demands that (a) natural capital is preserved and enhanced, (b) products and materials are kept in use, and (c) wastes and negative externalities are designed out of the system (Ellen MacArthur Foundation 2015). By implementing those steps, the economy can move from a linear to a circular system. Governments have adopted a circular approach in their policies, such as the EU in their Circular Economy Action Plan and Green New Deal, which promote a circular economy through legislation while also facilitating the uptake of circularity in businesses.

Circularity in business

Companies play a pivotal role in bringing about circular resource flows. As providers of goods and services, they can decide to change their processes from the current linear make-take-dispose system. By cycling resources, extending lifetimes and intensifying product use, businesses can create income opportunities while reducing resource use and wastage. To do so, they can adapt a circular business model (CBM). Business models are ways to express how a company creates, delivers and captures value (Osterwalder/Pigneur 2010). In the case of CBMs, the company wants to create value beyond profits and proposes to also create social value and benefits for the environment, for instance by reducing resource use and waste. CBMs are closely linked to sustainable business models which are similar but place a stronger focus on social benefits and may include environmental strategies beyond circling resources (e. g., climate change adaptation).

CBMs can follow different strategies. Bocken et al. (2016) specify that a company can decide to close, slow or narrow the

resource loop. In closing the resource loop, the materials in products are recovered after their lifetime and brought into circulation for another use, for instance through reuse, recycling or composting of materials. Slowing the loop refers to extended product lifetimes and more intense use of products. This can be facilitated through circular design, repair or offering the product-as-a-service. To narrow the resource loop, companies can improve their processes and ensure that fewer resources are needed in production. Additionally, firms can regenerate the resource loop by using non-toxic materials, renewable energy and regenerating natural ecosystems (Konietzko et al. 2020) (see figure 1).

To adopt a CBM, companies often need to innovate and experiment. While it might be easier for start-ups to set up a business based on circularity, incumbent businesses are also increasingly interested in moving towards circular processes and offerings. Geissdörfer et al. (2020) suggest that there are four different types of innovation towards CBMs. Companies can be 1) circular start-ups founded with the aim to slow, close, narrow or regenerate resource loops, 2) they can be existing businesses that decide to transform their entire business model towards circularity, 3) they can add circular operations to their portfolio to diversify, or 4) they can acquire units operating under a CBM. For businesses to adopt a CBM and implement innovation, it can be useful to trial a CBM and different strategies. To support this, circular business model experimentation has emerged as a vibrant research area collaborating with businesses to pilot circularity in companies and learn from those experiences to decide which circular strategy best fits the context. [1] It is about iteratively testing aspects of desirability, viability, feasibility and circularity in practice to come closer to a successful sustainable and circular business model (Baldassarre et al. 2020).

Beyond supply-side measures

Research into circular economy and circular business models is starting to highlight that supply-side initiatives might not be enough to meet the sustainability challenges posed through human resource consumption (Bocken/Short 2020). Consumption levels are continuously rising, increasing the need for virgin resources in the production to meet demand. Additionally, not all material streams can be made fully circular, with some materials degrading in recycling, and closed loops still requiring inputs of energy and virgin materials. Excessive consumption drives sustainability problems, such as climate change, biodiversity loss and resource depletion. In order to

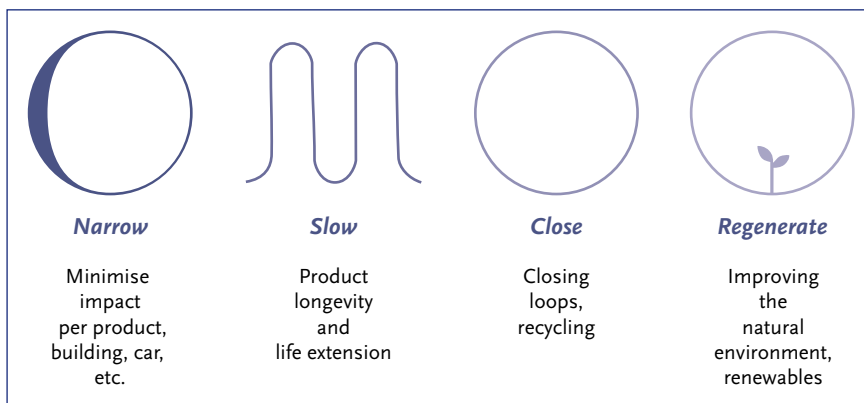


Figure 1: Circular business strategies.

Sources: Konietzko et al. (2020) and Bocken et al. (2016).

tackle these effectively, circular economy measures need to be combined with demand-side measures that reduce overall consumption levels. This means that a circular economy needs to be driven by the concept of sufficiency.

Sufficiency refers to consumption levels within the planetary boundaries that still enable well-being for citizens. As businesses are prime suppliers of products and creators of demand, they can help drive sufficiency through designing their business models to include sufficiency strategies (Niessen/Bocken 2021). [2] While businesses need to carefully design their offer to enable reduced consumption levels, circular business models can support sufficiency, with circular business and sufficiency strategies overlapping to some extent. As shown by the practice examples below, businesses that implement circular business models can combine these with sufficiency strategies, thereby driving sustainability on both the supply- and demand-side.

Examples from real life business practice

In the following, we present a handful of businesses that implemented circular business models and drive sufficiency. They are examples from different sectors and countries to show the wide spread of possible applications of circular business models and sufficiency strategies. An in-depth conceptualisation of business sufficiency strategies, their implementation and barriers can be found in Niessen/Bocken (2021). The circular business strategies used for describing the business examples stem from Bocken et al. (2016) as well as Konietzko et al. (2020).

The first case is headphones producer Gerrard Street. Based in the Netherlands, they work against the large waste stream of consumer electronics. The company aims to slow the resource loop by designing headphones that are durable and easily repairable by replacing broken parts. If headphones are returned to them for repair, broken parts will be replaced and remanufactured for further use. Gerrard Street headphones are sold with a lifetime warranty and can also be leased under an annual subscription. While presenting a prime example of slowing the loop, Gerrard Street also encourages sufficiency through their offering.

The second case is Nudie Jeans, a Swedish denim company. They work with several circular business strategies. Their products are designed for durability and repair is an essential part of their business model: Nudie Jeans offer their customers free repairs for life and provide free repair kits. The denim loop is closed by collecting old Nudie Jeans and repairing them for resale or recycling them into new items. Additionally, the company regenerates the loop by using organic cotton. These strategies all support a sufficiency direction, which the business promotes in public speaking,

interviews and research work.

The third case comes from the food sector. ODDBOX are based in the United Kingdom and provide customers with fruit and vegetable boxes compiled of unwanted produce. The produce is not sold through regular retail because it does not meet aesthetic standards (e. g., wonky vegetables) or is surplus produce. ODDBOX close the loop by rescuing wasted produce and reselling it to customers. They also narrow the loop by working with local suppliers where possible. Additionally, they promote sufficiency by advocating for conscious consumption habits.

The fourth case, Swapfiets, are a transport company founded in the Netherlands and active in eight EU countries and the United Kingdom. Swapfiets offer bicycles, scooters and e-bikes in a product-as-a-service business model. The user leases the vehicle but the company retains ownership and repairs or replaces it if necessary. Swapfiets aim to slow the loop by designing their vehicles for durability and enabling a long product life through maintenance and repair. They also close the loop by collecting the bicycles and scooters after use and ensuring proper recycling if they can no longer be used. Swapfiets promote sufficiency through slowing and closing the loop as well as encouraging bicycle use.

The fifth case is VAUDE, a German outdoor retailer. They have implemented strategies to slow, close and regenerate the loop. For slowing, they aim for long product lifetimes through design, a repair service and do-it-yourself repair instructions on the iFixit platform. They also offer a rental service for some items. For closing the loop, VAUDE work with recycled materials, such as down and PET plastic. Finally, they regenerate the loop by producing with organic materials. In addition to those, they are also vocal on the need for sufficiency, for instance in their “Forever yours” marketing campaign.

The final example hails from the furniture sector. Vitsœ produce and sell high-end furniture designed to be durable, easily repaired and adaptable to changing living situations. They are based in the United Kingdom but operate internationally. While supporting slowing the loop through their design and additional supporting services, Vitsœ also directly encourage their users to consume less. To that end, the company limits its

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marketing to a minimum, eschews sales and trains its staff to sell only what the customer needs. The use of wood in a lot of Vitsoe furniture also means they support regenerating the loop with renewable materials. These circular business features promote sufficient consumption to their customers who can use the furniture for a long time and pass it on to the next person.

Future outlook

These six examples showcase circular business models that companies can implement while also promoting sufficiency to their customers. With both incumbents and start-ups increasingly taking up circular business models and realising the potential of circularity, it is important to design these with sufficiency in mind. Businesses can contribute to this important shift by designing their operations with both circularity and sufficiency in mind. Strategies such as slowing the loop can support sufficiency and benefit the environment while simultaneously increasing customer satisfaction and retention. Citizens should reconsider the need to consume and buy new products while focusing on what they already have and what they need. Governments can support sufficiency through business with policies for long lifetimes, such as promoting repair, spare parts availability and banning planned obsolescence. Additionally, policy needs to take a higher-level approach towards sufficiency and support sustainability solutions that move us into the safe space of planetary boundaries. Research can help understand how businesses can contribute to sufficient consumption and move beyond sustainability action on the supply side to also include demand-side sustainability through overall reduced consumption levels.

Annotations

- [1] The authors of this article work within the Circular X project on Experimentation with Circular Business Models (<https://www.circularx.eu>). The project has received funding from the European Union's Horizon 2020's European research Council (ERC) funding scheme under grant agreement No 850159.
- [2] Previous publications in this journal highlighting the potential for sufficiency business models include Kropfeld, M. I./Reichel, A. (2021): Das Geschäftsmodell des Genug. In: *Ökologisches Wirtschaften* 36/3: 30–34 and Palzkill, A./Schneidewind, U. (2013): Suffizienz als Business Case. In: *Ökologisches Wirtschaften* 28/1: 23.

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