1.3 Business objectives

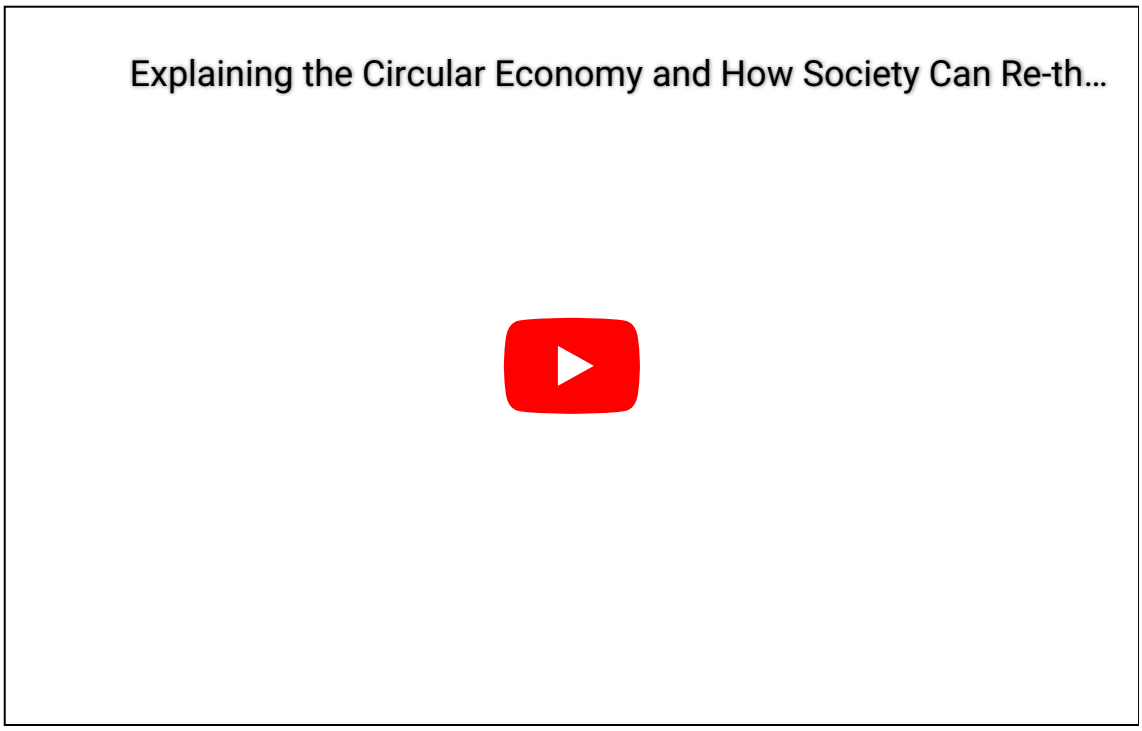
Tool: Circular business models

You may have walked through a forest and seen leaves scattered on the ground, perhaps along with plastic waste. Over the course of a few months, nature will decompose the leaves to form new fertile soil for the trees and plants. The plastic will take hundreds of years to break down.

Figure 1. Nature wastes nothing; humans waste too much.

Credit: ROBERT BROOK/SCIENCE PHOTO LIBRARY, Getty Images

Circular business models aim to get businesses to work more like nature, by designing systems that feed back outputs as inputs, and designing out waste from the start. The short video below from the Ellen MacArthur Foundation, which you learned about in Section 1.3.5 (/study/app/y12-business-management-a-sl-may-2024/sid-352-cid-174703/book/strategies-and-tactics-id-36851), explains the circular economy.



Video 1. Explaining the circular economy.

International Mindedness

Circular models are not new. In fact, indigenous populations around the world are known for using circular strategies to live in harmony with nature and each other.

In the United Nations article below, many examples of indigenous cultures using circular strategies are highlighted.

For a truly circular economy, we need to listen to indigenous voices. (https://www.undp.org/blog/truly-circular-economy-we-need-listen-indigenous-voices)

One of the examples cited in the article is highlighted in the following video. (Note: the video in Spanish with English subtitles.)

Video 2. How a group of farmers in Costa Rica are using a circular model.

What can we learn bout improving global sustainability from these cultures?

Principles of circular economy

Before exploring circular business models, it helps to understand three underlying principles that guide thinking on circularity, according to the Ellen MacArthur Foundation (https://ellenmacarthurfoundation.org/).

Concept

Creativity and Sustainability

Moving from a take–make–waste linear economic system to a more sustainable system that is based on circular principles depends upon designers and manufacturers thinking creatively. From the moment they have an idea about meeting a human need or solving a problem, designers and manufacturers need to consider how to embed circularity into choices of materials, manufacturing process, and the product's end of life.

This requires moving away from current materials and processes and reimagining or inventing new materials, manufacturing and recovery. New business models need to be used, requiring flexible thinking across traditional disciplines.

Table 1. Principles of a circular economy.

Principle	Description
1. Eliminate waste and pollution	Waste and pollution are design flaws. We can design products from the start to be circular.
2. Circulate products and materials	With planning and good design, we can ensure that products can be reused, repaired or remanufactured. Food and packaging should be circulated, avoiding landfills.
3. Regenerate nature	Nature wastes nothing. If we return nutrients to the Earth's systems, we can enhance and rebuild natural resources.

Activity

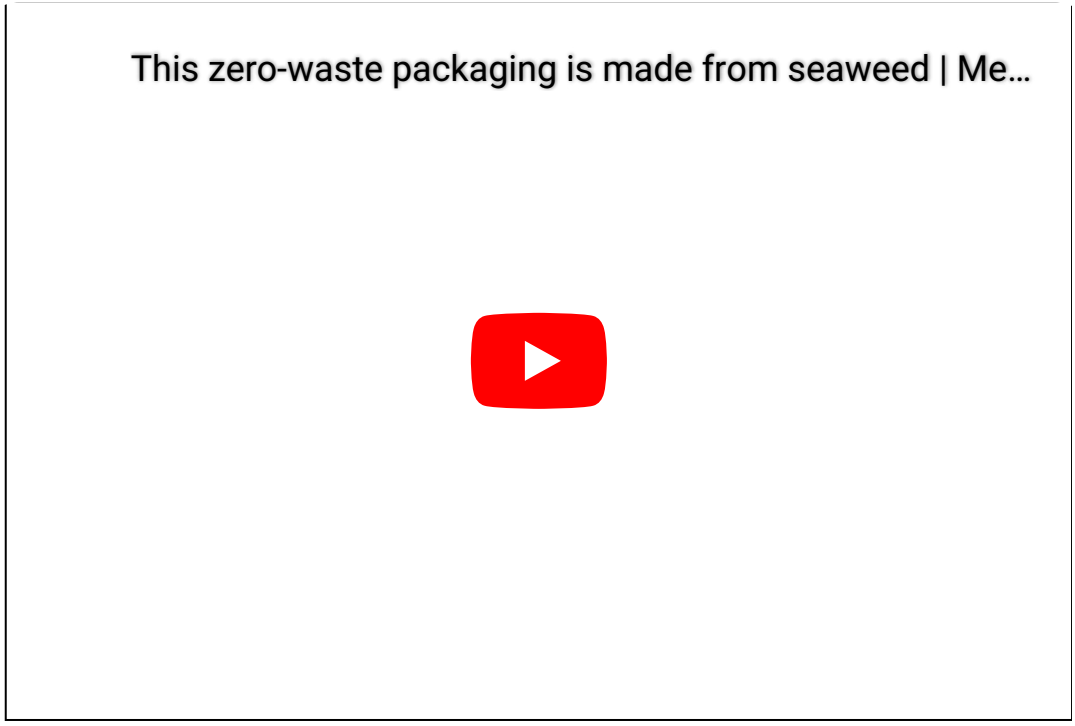
Learner profile: Knowledgeable
Approaches to learning: Thinking skills (critical thinking, creative thinking)

Watch the short video below, which shows some examples of how waste is being designed out of products.

1. Describe the two innovations highlighted in the video.
2. Explain how those innovations are designing out, or eliminating, waste and pollution (the first principle of circular economy).
3. Towards the end of the video, Serena Pozza from DSM-Niaga says that circular innovations exist, but they need to be scaled up.
   - What does she mean?
   - What is the role of businesses in scaling innovations?
   - What is the role of consumers in scaling innovations?

The following two companies feature in the video :

- Notpla: packaging developed by Skipping Rocks Lab
- Niaga: closed loop mattresses



Video 3. Examples of zero-waste packaging.

Circular business models

There are a number of circular business models that businesses can adopt to move away from linear production systems. They aim to decouple revenues from resource production to reduce resource extraction, greenhouse gas emissions, pollution and waste, and biodiversity loss. While each of these models represents a distinct strategy, most businesses engaged with circularity will adopt elements of multiple strategies. This will be explored at the end of this section by looking at the fast-fashion retailer H&M.

Making connections

The OECD has published an extensive description and evaluation (https://www.oecd-ilibrary.org/sites/e59f8dd6-en/index.html?itemId=/content/component/e59f8dd6-en) of all of these models. If you are interested in exploring these models in even greater depth, this OECD publication is a good place to start.

Figure 2. There are a variety of circular business models.

Credit: Doerte Siebke / EyeEm, Getty Images

Circular supply models

Circular supply models enable businesses to reduce new material inputs, replacing them with recovered or bio-based materials. These resources can be planned into design and production decisions from the start, reducing the environmental impact in supply chains and potentially reducing the cost of resources. This model is also known as cradle-to-cradle product design, to distinguish it from the cradle-to-grave linear system. Circular supply models are modelled on natures; the outputs of a business feed back into the production process as inputs.

Resource recovery models

Resource recovery models are closely related to circular supply models. However, instead of focusing on the businesses that use the circular materials in their products, these models focus on the business collecting, sorting and processing waste materials.

According to the OECD, the three main activities involved in resource recovery models are:

- **collecting** waste materials produced by households and businesses. This is often organised by local governments but can

also be done in partnership with for-profit social enterprises (see Section 1.2.3 (/study/app/y12-business-management-a-sl-may-2024/sid-352-cid-174703/book/forprofit-social-enterprises-id-36841)).

- **sorting** waste into different materials. In some cases, this is also done by local governments, perhaps in partnership with private enterprises.
- **secondary production** where waste is transformed into finished raw materials. This is usually done by companies in the private sector, which then sell the raw materials to other businesses.

Figure 3. If you use recycling bins at school or at home, you contribute to the resource recovery model.

Credit: Maskot, Getty Images

Product life extension models

Product life extension models focus on extending the time that a consumer uses products. If consumers use products longer, it reduces the amount of inputs needed to create new products. Product life can be extended in a number of ways:

- **Design for durability**. With this strategy a business produces a high quality product that is meant to last. Businesses that design durable products can charge higher prices, called premium pricing, thus earning more revenue.
- **Reuse and repair**. With this strategy, businesses ensure that products are used to the very end of their life. An example of reuse is a second-hand clothing shop. Manufacturers can also offer repair services; third parties offer such services too.
- **Remanufacturing**. With this strategy, businesses 'reset the clock' on their products, recovering and remanufacturing them to start a new service life. The original or third party businesses can resell products that have been remanufactured, earning revenue on a product a second time. Examples of this are smartphones and other digital devices, which are often discarded after a short time but with a little attention can be as good as new again.

Figure 4. A tailor can repair clothes, making them last longer.

Credit: Michael Moeller / EyeEm, Getty Images

Sharing models

You may have several products at home that are used only occasionally. Could those products be made available to others to use when you are not using them? The idea of sharing is not new. However, the idea of sharing with strangers is new.

Sharing models allow consumers to share use of products with strangers, reducing the new inputs needed for products that might be under-utilised by the consumer. The sharing is usually supported by online platforms that show what products are available, where they are, and when they are available. One example of such an online platform is Airbnb. The owners of the online platforms can take a small fee for the transactions.

There are other systems where businesses own and share the products (business to consumer or B2C). Consumers can also own the products and share them (consumer to consumer or C2C).

There are two general types of sharing models:

- **Co-ownership** involves the lending of physical goods. This could be the sharing of household tools and appliances through an online platform like Peerby.
- **Co-access** involves allowing others to take part in an activity that would have occurred anyway. For example sharing seats in a carpool for a particular journey.

Figure 5. Carpooling is an example of a co-access version of circular sharing models.

Credit: Hirug, Getty Images

Product service system models

Product service system models involve selling the service for using a product rather than selling the product itself. This model improves incentives for sustainable product design because the business wants the product to last a long time so that it can sell its services. There are two types of product service system models:

- **Product-oriented service system models** focus on selling products and associated after-sale services, such as maintaining or repairing the product through a contract or take-back agreement.
- **User-oriented product service system models** involve consumers paying for temporary access to products, usually through a leasing agreement. The business retains ownership of the product. An example is car-sharing, which is popular in urban areas. Netflix and Spotify also fall into this category.

Figure 6. Owning music is rare these days; people usually buy music listening services instead.

Credit: Johner Images, Getty Images

Activity

Learner profile: Inquirers
Approaches to learning: Research skills (information literacy); Thinking skills (transfer)

Option 1
The fast-fashion company H&M has partnered with the Ellen MacArthur Foundation to explore and implement circular strategies in its business.

1. Read through H&M's circular strategy (https://hmgroup.com/sustainability/circular-and-climate-positive/circularity/#:~:text=We%20aim%20to%20create%20a,reused%20and%
2. Identify and explain two or three ways that H&M is using circular business models to improve sustainability. Refer specifically to the models described above. Share and discuss your results with a partner or group.

Option 2
Philips is a health technology company that has increased its use of circular strategies.

1. Read through Philips' circular strategy (https://www.philips.com/a-w/about/environmental-social-governance/environmental/circular-

economy.html).

2. Identify and explain two or three ways that Philips is using circular business models to improve sustainability. Refer specifically to the models described above. Share and discuss your results with a partner or group.

Limitations of circular business models

Businesses are moving rapidly to circular strategies, but there are some risks and limitations posed by these models:

- **Undeveloped systems for waste recovery**: Circular supply and resource recovery models rely on well-developed systems for waste recovery, as well as a culture shift in the wider society. There needs to be enough recovered waste, at a reasonable cost, for these models to work.
- **Increased use of bio-based materials** for products may result in there being less land for food production, which could result in less biodiversity.

Figure 7. Harvesting plants (such as corn) in order to make bio-based materials to replace plastics could result in more land conversion, which would harm biodiversity.

Credit: Roelof Bos, Getty Images

- **Negative unintended consequences**: It is important to take a system view when thinking about circular business strategies, in order to avoid unintended negative consequences. For example, Airbnb has been blamed in part for raising housing costs and turning quiet neighbourhoods into noisy tourist centres in some cities.

Figure 8. Temporary apartment rentals to tourists have disrupted housing markets and degraded quiet neighbourhoods for residents.

Credit: South_agency, Getty Images

- **Rebound effects**: When businesses or consumers save money by using recycled inputs or products, they may take the savings and use them for increased production or consumption. This can negate the reduction of CO_2 emissions or the resource benefits of the circular model.
- **Circular strategies may not counter growth-oriented business models**: The core business model of some businesses may be so damaging that circular strategies are not enough to mitigate the harm. Many fast-fashion retailers have a core business model that depends on excessive consumption of clothing, so the environmental damage is likely to continue, even with circular strategies in place.
- **Circular business models do not address social issues**: Generally, circular business models are concerned with environmental and economic sustainability, but not with sociocultural sustainability. So businesses that use circular

strategies must also consider other methods to address their impact on society.

Activity

There are many possible activities to help you understand and apply circular business models. For each of the business models listed in this section, see if you can:

- Explain how a business involved in that model could earn profits. Consider the costs for the business, as well as how revenues are earned.
- Identify two or three businesses using circular strategies in your city or town. Share your insights with a group. Several of you could work on a circular resource guide for the school community as a CAS project, focusing on one or more types of businesses such as second-hand clothing.
- Identify one or two ways that your school could use a circular business model to improve sustainability. Pitch the idea to your school administration to see if the plan can be implemented. This could also be a CAS project.
- Consider how your school's events or festivals could become more circular. Can you plan and implement a zero-waste school event? Again, this could make an interesting CAS project for a group of students.
- Choose a favourite household item and explain two ways in which the business that made the item could have used circular strategies to improve its sustainability. You could present your ideas to the class for feedback.
- Research whether there are regulations in your city on short-term rentals, shared bicycles or scooters, or other regulations on circular businesses that aim to mitigate unintended negative consequences.

Making connections

If you want to learn more about the circular economy or circular business models, the following resources may be interesting for you:

- Ellen MacArthur Foundation (https://ellenmacarthurfoundation.org/)
- Fashion Revolution (https://www.fashionrevolution.org/)

And here are some online courses:

- Circular economy: An Introduction (https://www.edx.org/course/circular-economy-an-introduction)
- Circular economy: An Interdisciplinary Approach (https://www.edx.org/course/circular-economy-an-interdisciplinary-approach)

- Circular economy: Sustainable Materials Management (https://www.coursera.org/learn/circular-economy)
- Circular Business Models for Sustainable Urban Food Systems (https://www.futurelearn.com/courses/circular-business-models-for-sustainable-urban-food-systems)
- Circular Fashion: Design, Science and Value in a Sustainable Clothing Industry (https://www.edx.org/course/circular-fashion-in-a-sustainable-clothingindustry)