



Business Management Toolkit

8. CIRCULAR BUSINESS MODELS (SL&HL)

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8. Circular Business Models - Objectives - Syllabus links

- It is recommended that it is introduced and taught to the students in Unit 1 or Unit 5 (Any chapter of Unit 1 or Unit 5)
- All models can also be integrated in Operations Management (Unit 5)



8. Circular Business Models

According to the IB syllabus, this chapter will focus on the following models:

1. Circular supply models
2. Resource recovery models
3. Product life extension models
4. Sharing models
5. Product service system models



8. Introduction to circular economy



The current economy is linear. We take materials from the Earth, make products from them, and eventually throw them away as waste.

In a circular economy, the aim is to stop producing waste. The circular economy has three principles:

1. Eliminate waste and pollution
2. Circulate products and materials (at their highest value)
3. Regenerate nature

It is linked to renewable energy and materials. A circular economy decouples economic activity from the consumption of finite resources. It is a resilient system that is good for business, people and the environment.



8. Introduction to circular economy



8. Introduction to circular economy



8. Introduction to circular economy



8. Why is it important?



8. Why is it important?

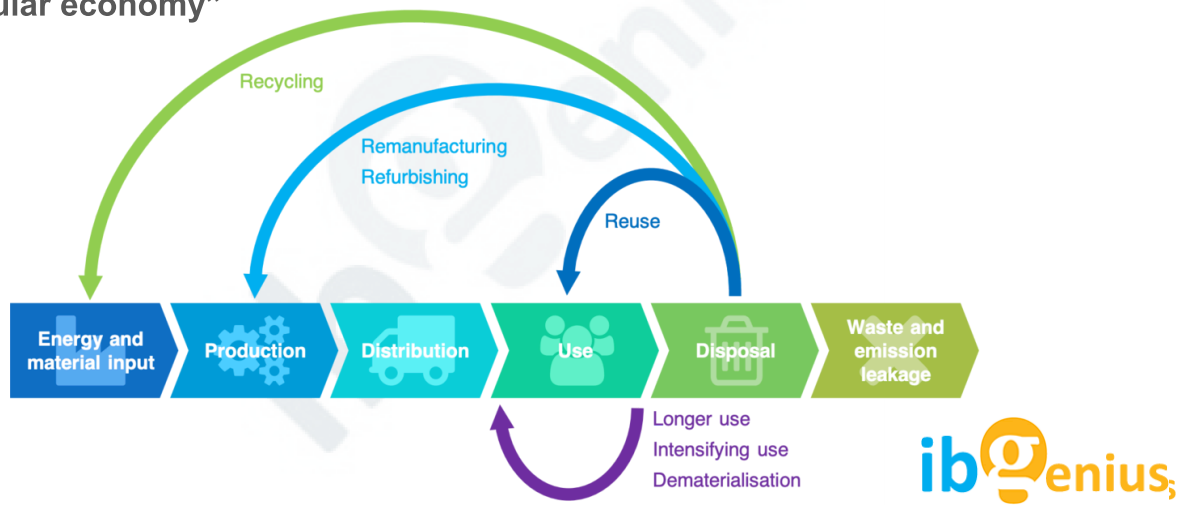


8. Why is it important?



8. Circular Business Models

“Circular business models are key levers for the implementation of a circular economy”



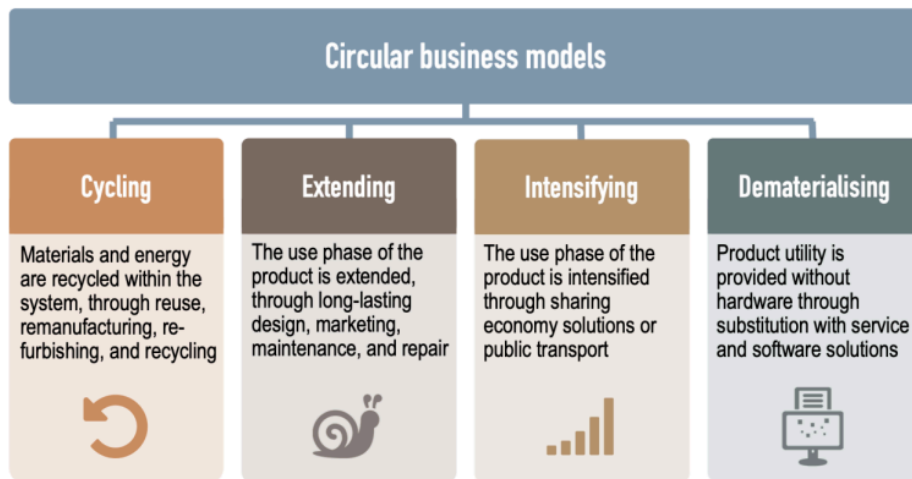
8. Circular Business Models

“Circular business models can be defined as business models that are cycling, extending, intensifying, and/or dematerialising material and energy loops to reduce the resource inputs into and the waste and emission leakage out of an organisational system”.



Source: Geissdoerfer, M., Pieroni, M.P., Pigosso, D.C. and Soufani, K., 2020.

8. Circular Business Models - Their focus



Source: Geissdoerfer, M., Pieroni, M.P., Pigosso, D.C. and Soufani, K., 2020.



8. Circular Business Models

We are going to investigate the following circular business models:

- Circular supply models
- Resource recovery models
- Product life extension models
- Sharing models
- Product service system models



8. Circular Business Models - Evaluation

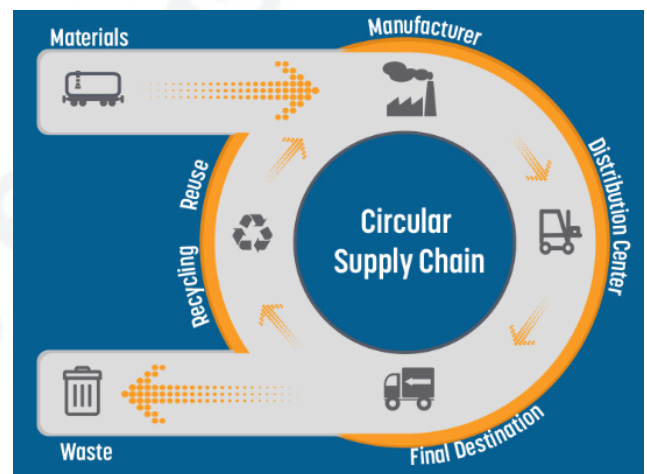
Advantages	Disadvantages
<ul style="list-style-type: none"> - Less extraction of natural resources - Innovation - Offers competitive advantage - Enhances a business's brand image - Allows change in consumption habits - New job creation 	<ul style="list-style-type: none"> - Possible capital expenditure needed - Lack of regulations governing legal competition among companies - Lack of environmental awareness on the part of suppliers and customers - Technical skills and abilities needed which may increase costs of training or are not yet present in the workforce. - Consumer acceptance problems.



8.1 Circular Supply Chain models

“The circular supply chain is a model that encourages manufacturers and sellers of products to take discarded materials and remake them for resale”.

The traditional model of “take, make, and throw away” is an economic dead-end and is costing businesses as they struggle with raw material costs and volatility.



Source: <https://www.supplychain247.com>



EXAMPLE

8.1 Circular Supply Chain models



Nike's "Reuse-a-shoe Program:

Find out more:
<https://www.nike.com/sustainability>

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8.1 Circular Supply Chain models - Evaluation

Advantages	Disadvantages
<ul style="list-style-type: none">- Less money spent on raw materials- Environmental sustainability- Possible government incentives- Less risk of price volatility (of raw materials)- Enhance brand image- Customer satisfaction	<ul style="list-style-type: none">- Not all products are easy to disassemble- Not all production processes can incorporate disassembling and reusing parts- Parts of products may come from different geographical areas and returning parts may be costly and difficult- Adequate corporate culture- Products should be designed from the beginning as part of a circular supply chain model

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8.1 Circular Supply Models - Further reading & References

<https://www.weforum.org/agenda/2022/01/5-circular-economy-business-models-competitive-advantage/>

<https://hbr.org/2021/07/the-circular-business-model>

<https://hbr.org/2021/06/circular-supply-chains-are-more-sustainable-why-are-they-so-rare>

<https://sustainabilityguide.eu/methods/circular-business-models/>

<https://www.supplychain247.com/article/how-the-circular-supply-chain-model-will-replace-the-linear-supply-chain>

Case study for post pandemic:

<https://blog.veolianoorthamerica.com/circular-economy-solutions-recover-value-post-pandemic-supply-chain>



8.2 Resource recovery models

Resource recovery is using wastes as an input material to create valuable products as new outputs.

- The aim is to reduce the amount of waste generated, thereby reducing the need for landfill space, and optimising the values created from waste.
- Resource recovery business models involve the production of secondary raw materials from waste streams.



8.2 Resource recovery models



Source: <https://grasshopper.net.au/what-is-resource-recovery/>



8.2 Resource recovery models

The resource recovery business model, or recycling has several variants:

Downcycling: Like recycling, downcycling involves the transformation of waste into secondary raw materials. The key difference is that the recovered materials are of an inferior quality, and can only be used as an input in a limited subset of applications. E.g. Paper recycling

Upcycling: Upcycling is the opposite of downcycling. It involves the transformation of waste into secondary raw materials, and their subsequent use in relatively high value applications.



8.2 Resource recovery models

The resource recovery business model, or recycling has several variants:

Industrial symbiosis: Industrial symbiosis, or closed loop recycling as it is sometimes called, involves the use of production by-products from one firm as production inputs by another. Relative to classical recycling, there is more of an emphasis on commercial and industrial waste streams and, at the same time, fewer intermediate actors involved in material transformation.

E.g. Industrial symbiosis is most common in industries that produce very pure and homogeneous material flows, such as the chemical industry.

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EXAMPLE

8.2 Resource recovery models

Adidas partnership with Parley for the Oceans and turns plastic bottles into shoes

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8.2 Resource recovery models



Adidas partnership with Parley for the Oceans and turns plastic bottles into shoes



8.2 Resource recovery models

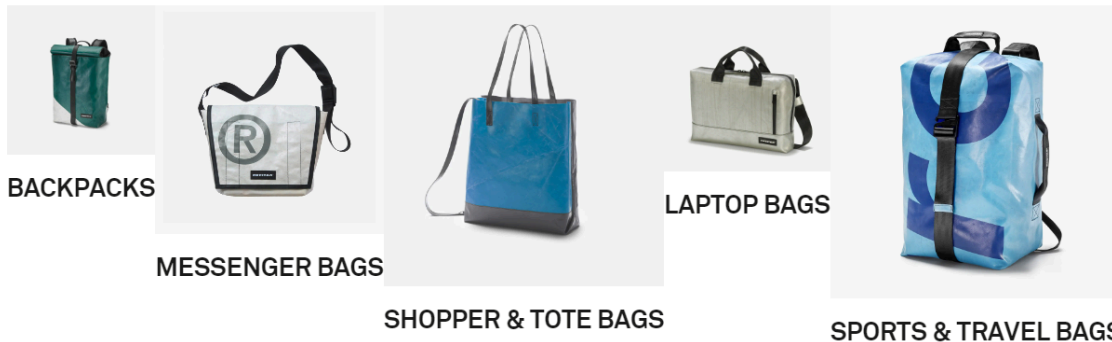
Adidas partnership with Parley for the Oceans and turns plastic bottles into shoes



EXAMPLE

8.2 Resource recovery models

Example of resource recovery models (upcycling) : Freitag, a German apparel manufacturer, that produces bags made from truck tarps, car seat belts, and bicycle inner tubes



<https://www.freitag.ch/en>

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8.2 Resource recovery models - Further reading & References

OECD (2019), *Business Models for the Circular Economy: Opportunities and Challenges for Policy*, OECD Publishing, Paris, <https://doi.org/10.1787/g2g9dd62-en>.

<https://www.oecd-ilibrary.org/sites/e59f8dd6-en/index.html?itemId=/content/component/e59f8dd6-en>

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8.3 Product life extension models

The Product Life Extension business model focuses on lengthening the time period that a product can be used before disposing of it.

The goal is to maximize both lifespan and utilization, by increasing the value extracted from products before they are discarded.

Benefits for companies:

- Durability is a key competitive differentiator (especially from low-cost, low-quality producers)
- Provides a strong rationale for premium pricing
- Prevents customers from going to a rival brand

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EXAMPLE

8.3 Product life extension models

Outdoor-clothing manufacturer Patagonia focuses on durability of their clothes



DON'T BUY THIS JACKET

patagonia
patagonia.com

COMMON THREADS INITIATIVE

REDUCE
WE make useful gear that lasts a long time
YOU don't buy what you don't need

REPAIR
WE help you repair your Patagonia gear
YOU pledge to fix what's broken

REUSE
WE help find a home for Patagonia gear you no longer need
YOU sell or pass it on*

RECYCLE
WE will take back your Patagonia gear that is worn out
YOU pledge to keep your stuff out of the landfill and incinerator

REIMAGINE
TOGETHER we reimagine a world where we take only what nature can replace

patagonia
patagonia.com

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8.3 Product life extension models

- Home-appliance company Miele focuses on durability and quality
- Bosch Power Tools extends the life of its used tools by remanufacturing them



8.4 Sharing models - Understanding the sharing economy

People have shared the use of assets for thousands of years, but the growth of the internet and the big data have facilitated asset owners and those seeking the use of these assets to connect much easier and faster. This sort of dynamic can also be referred to as the share economy, collaborative consumption, collaborative economy, or peer economy.

“The sharing economy is an economic model defined as a peer-to-peer (P2P) based activity of acquiring, providing, or sharing access to goods and services that is often facilitated by an online platform” (Investopedia.com)

8.4 Sharing models - Understanding the sharing economy

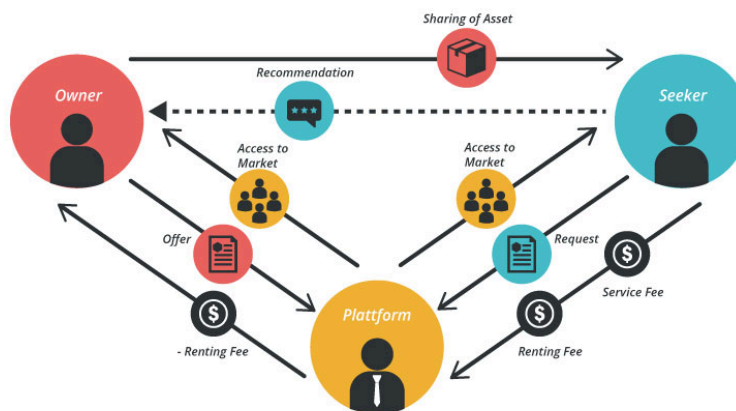
Characteristics:

- Access instead of ownership: rather than buying an asset, the seeker rents it from someone else
- A platform brings together owners and seekers and facilitates all processes between them
- The business / platform itself does not possess any of the assets on offer (e.g. Airbnb does not own any of the properties)



8.4 Sharing business models

Sharing Economy



Source:
<https://bmttoolbox.net/patterns/sharing-economy/#:-:text=The%20main%20features%20of%20a%20a%20facilitates%20all%20processes%20between%20them>

Business Model Toolbox



8.4 Sharing business models

EXAMPLE



KICKSTARTER



Activity:

1. Identify the above companies
2. Describe for each one of them their sharing business model
3. Find more companies that use a sharing business model
4. Discuss benefits and risks of the sharing business models



8.4 Sharing business models - References

<https://bmttoolbox.net/patterns/sharing-economy/#:~:text=The%20main%20features%20of%20a, facilitates%20all%20processes%20between%20them>

<https://www.businessinsider.com/the-success-of-the-sharing-economy-2014-2?IR=T>

<https://www.sciencedirect.com/science/article/pii/S0959652620315663>



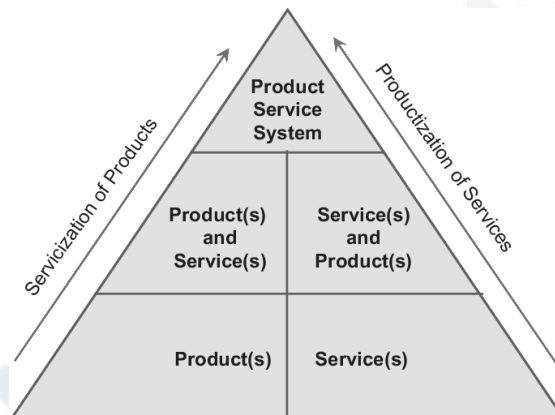
8.5 Product Service System models

The Product Service System business models **offer the function of the product, not the product itself.**

These businesses provide a service and do not sell tangible products. By this way, consumers use a service to cover their needs instead of buying the physical product.



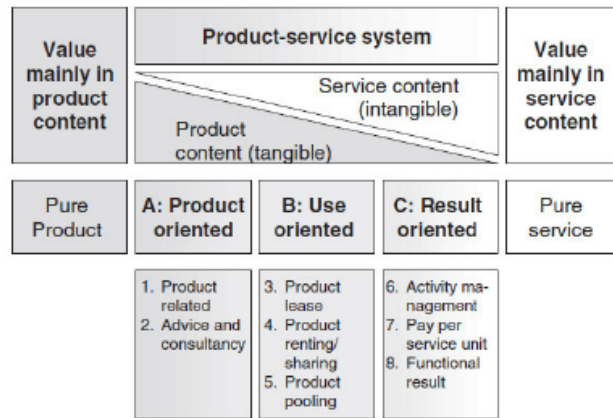
8.5 Product Service System models



Source: Baines, Tim & Lightfoot, Howard & Evans, Steve & Neely, Andy & Greenough, Richard & Peppard, Joe & Roy, Rajkumar & Shehab, Essam & Braganza, A & Tiwari, Ashutosh & Alcock, Jeffrey & Angus, James & Basti, M & Cousens, A & Irving, Phil & Johnson, Mark & Kingston, J. & Lockett, Helen & Martinez, Veronica & Wilson, Hugh. (2007). State-of-the-art in product-service systems. Proc IMechE Part B: J Eng Manuf. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture. 221. 1543-1552.



8.5 Product Service System models - Different types



Source: Benedetti, Miriam & Cesarotti, Vittorio & Holgado, Maria & Introna, Vito & Macchi, Marco. (2015). A Proposal for Energy Services' Classification Including a Product Service Systems Perspective. Procedia CIRP. 30. 10.1016/j.procir.2015.02.121.



8.5 Product Service System models



Activity:

1. Identify the above companies
2. Describe for each one of them their product service system model
3. Discuss benefits and risks of the product service models



8.5 Product Service System models

<https://www.mjvinnovation.com/blog/what-is-the-product-service-system-and-what-is-its-relationship-to-sustainability/>

<https://www.consultancy.eu/news/7350/as-a-service-business-models-what-it-is-and-its-benefits>

<https://hbr.org/2021/07/the-circular-business-model>

<https://www.weforum.org/agenda/2022/01/5-circular-economy-business-models-competitive-advantage/>



Circular business models - Summary

- **Circular supply models:** The circular supply chain is a model that encourages manufacturers and sellers of products to take discarded materials and remake them for resale
- **Resource recovery models:** Resource recovery is using wastes as an input material to create valuable products as new outputs.
- **Product life extension models:** The Product Life Extension business model focuses on lengthening the time period that a product can be used before disposing of it.
- **Sharing models:** Access instead of ownership, rather than buying an asset, the seeker rents it from someone else
- **Product service system models:** The Product Service System business models offer the function of the product, not the product itself.



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