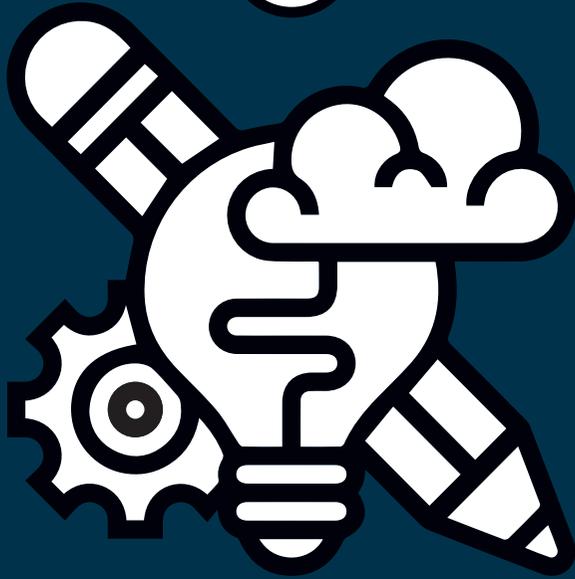


1

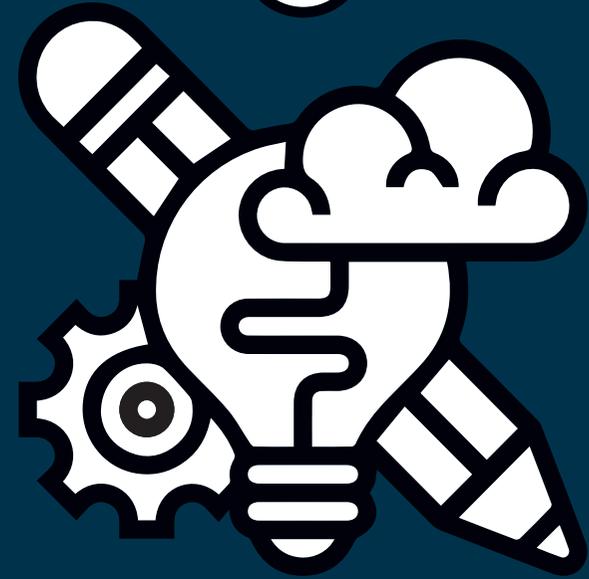


START HERE

ACTION CARD

ROUND 1

2



**CIRCULAR FUTURE
Business model pattern**

ACTION CARD

ROUND 2

One player reads out all business model patterns for the chosen role (e.g. all with "C").

a) Which circular business model pattern could suit us?

*Discuss and choose a pattern.
Now place the pattern on the far right on the "Selected circular business model pattern" box. Put all other pattern cards aside.*

b) Case example

One player reads out the example relating to the business model pattern.

Afterwards, working together, summarise the case example in one sentence and discuss what is innovative about it.

Do you know of any other examples?

One player picks up all the role cards and reads out just the title in each case.

a) What is our primary role/function in the value cycle?

Discuss and place the appropriate role card in the "Selected role card" box in the middle of the game board.

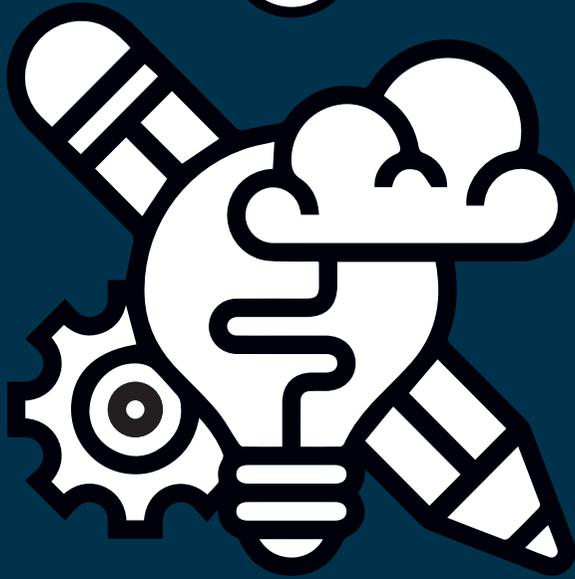
Tip: If multiple roles primarily apply to you, decide on one role on the basis of a product or service.

b) What is the essence of our current business model with regard to customers, product/service, KPIs, business partners?

How would you explain your customers, product/service, KPIs and business partners to a neighbour?

Fill in the "Current situation" box with one yellow sticky note per aspect. ■

3

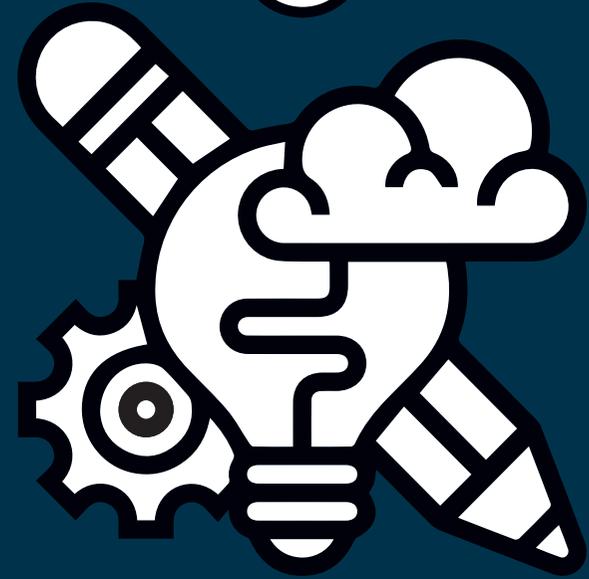


Business model sub-patterns

ACTION CARD

ROUND 3

4



Select and clear away

ACTION CARD

ROUND 4

Now select just one realistic business model sub-pattern to think through in more depth in the following steps.

Give it a snappy title and write it down in the "Our circular business model" box.



Optional: If you want, you can take a photo of the intermediate state of the game board.

Clear away all the business model sub-patterns (including the associated sticky notes) which are not (yet) realistic for you at this point in time.

Four of nine rounds have now been played. Well done! After four rounds, you have ...

- ✓ *... established your role in value creation, including the current situation*
- ✓ *... visualised a basic circular business model pattern suitable for your company and got to know a case example*
- ✓ *... selected the business model sub-pattern which you as a team now see as having the greatest potential to be implemented in your company.*

Now it's time to get down to the brass tacks for your selected business model. Good luck!

One player reads out all the business model sub-patterns for the selected business model pattern (e.g. all with "C6.1, C6.2, C6.3") and places them on the "Service level 1-3" boxes (see arrow on the sub-pattern).

a) What would the business model sub-patterns with the respective service level look like in our company?

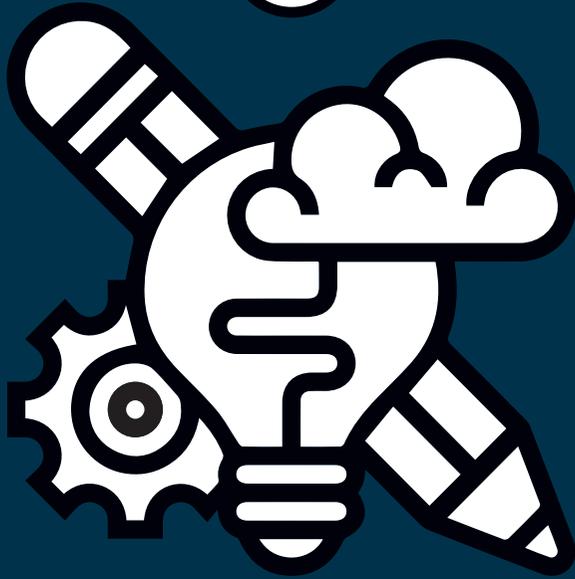
Write down your answers as keywords on yellow sticky notes and stick them next to the corresponding sub-pattern. ■

Note: *If there are fewer than three sub-patterns, feel free to browse the sub-patterns for other pattern cards. Then also place the card(s) on the "Service level 1-3" boxes (see arrow on the sub-pattern).*

b) Which business model sub-patterns is realistic and feasible for us now and which are not (yet)?

Write down your answers on yellow sticky notes. ■

5

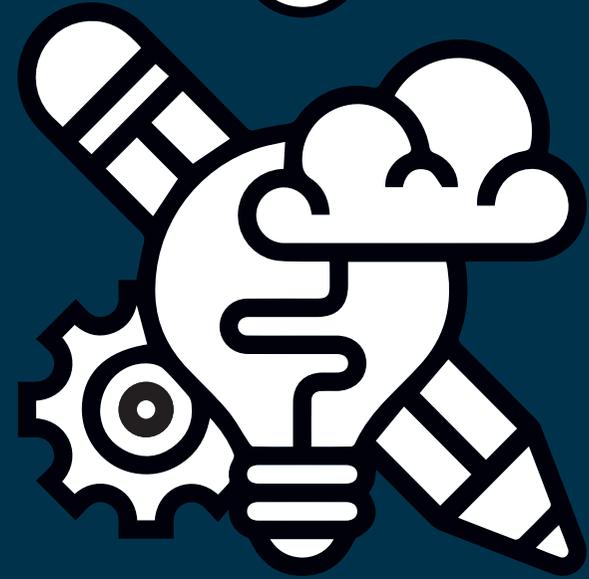


Partnerships

ACTION CARD

ROUND 5

6



**ENABLERS »product design«
and »digital technologies«**

ACTION CARD

ROUND 6

Discuss and write down your answers as bullet points on green sticky notes in the “Enablers” box. ■

Brainstorming: How, in specific terms, do we need to redesign our product for circularity at the product and component level and adapt it to our circular business model?



Inspiration: Design for recycling, exclusion of Substances of Concern, reparability, durability, modularity, technology upgrade, disassembly, etc.

Note: *If you are playing on the basis of a service, decide as a team whether or not you can address this task. If not, just move on to the next brainstorming task.*

Brainstorming: Which key digital technologies can help us make the selected business model sub-pattern a reality?



Inspiration: See 'Key digital key technologies for the Circular Economy' list in the envelope.

One player picks up the remaining role cards. Starting from your own position, you as a team now place them around the “Partnerships” circle in such a way as to model the value creation of the current model.

a) Which existing and new business partners (internal & external) do we need for our selected business model sub-pattern?



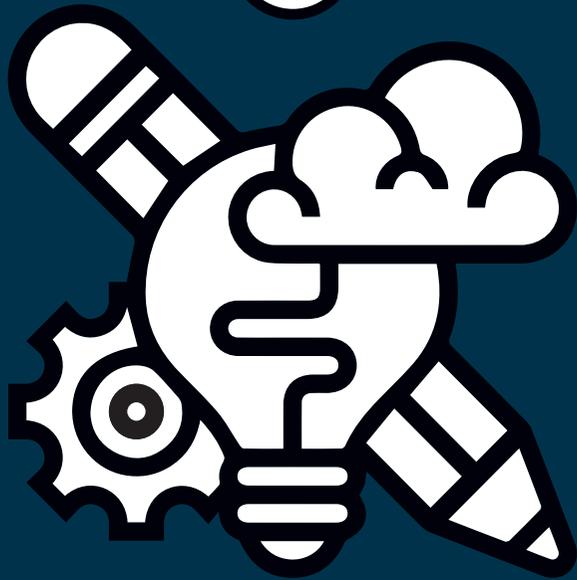
Inspiration: See „Possible partnerships” on the back of the selected sub-pattern card.

Note: *If you find you need a second or further copies of a role card or if you have perhaps even identified a completely new role, simply add the missing role(s) with a green sticky note. ■*

b) How should cooperation be structured?

Discuss and record your findings on each role card with yellow sticky notes. ■

7

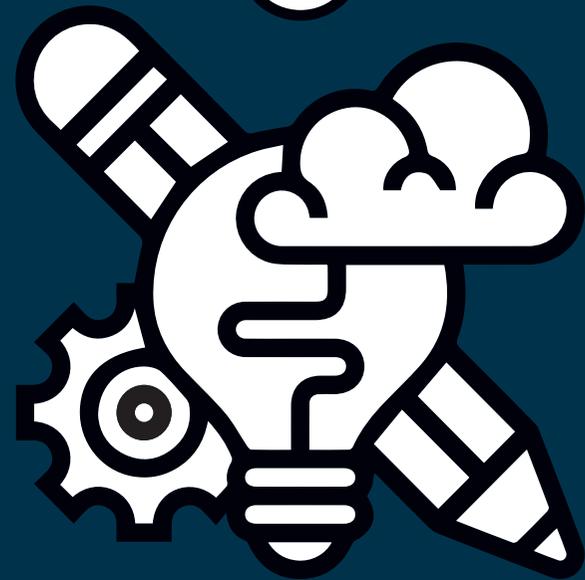


Barriers

ACTION CARD

ROUND 7

8



Implementation

ACTION CARD

ROUND 8

One player takes the “experimental canvas”, “partner canvas” and “project chart” documents for round 8 out of the envelope.

a) How do we want to approach implementation?

On the basis of the most pressing and important barriers, decide which canvas will support your implementation well and fill it in together.

Option 1: Experimental canvas

Inspiration: For addressing challenging barriers with regard to the selected business model

Option 2: Partner canvas (recommended!)

Inspiration: For addressing challenging barriers with regard to partnerships

Option 3: Project chart

Inspiration: For addressing challenging barriers with regard to enablers

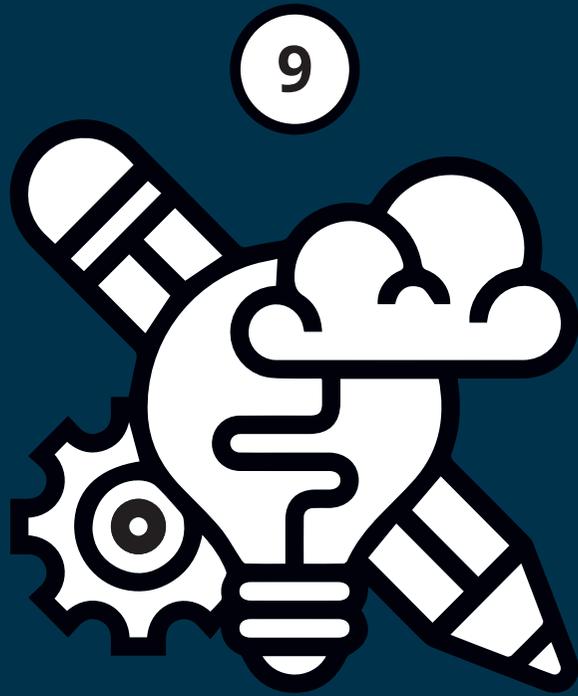
One player opens the envelope and takes out the “Barrier list” for round 7 and reads out just the barrier categories. The listed barriers are for inspiration.

a) Which barriers do we face with regard to:

- **selected business model sub-pattern**
- **partnerships**
- **enablers**

Discuss and record the results as bullet points on pink sticky notes in the appropriate “Business model sub-patterns”, “Partnerships” or “Enablers” box. ■

*In the middle of difficulty
lies opportunity.
Albert Einstein*



Transfer into everyday business

ACTION CARD

ROUND 9

One player takes the “Transfer into everyday business” document from the envelope and places it on the note-pad.

a) Evaluate how feasible, how innovative and how circular the circular business model is that you have worked out.

On the note-pad draw a scale from 1-10 for each of the characteristics “feasible”, “innovative” and “circular” and record your results.

Recommendation: *Assess the time dimension of feasibility by drawing a timeline as a fourth scale with the following time periods: short term (in the next 1 to 3 years), medium term (in the next 5 years) and long term (in the next 5 to 10 years). Record your results.*

b) Based on today’s experience, what three specific steps do you as a team actually want to take as a starting point in your company?

Record your three specific steps on the “Transfer into everyday business” document.

To increase accountability, *designate one person in the group to send everyone calendar invitations for these defined steps.*

CONGRATULATIONS!
YOU HAVE SUCCESSFULLY COMPLETED THE GAME.





ROLE in
value creation

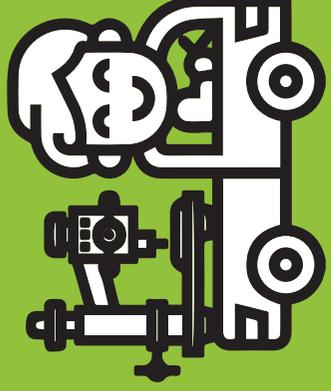
A

Supplier (molecules/materials)

Circular business model pattern for this
role

A1 Circular raw materials supplier

A2 Process molecule service provider



ROLE in
value creation

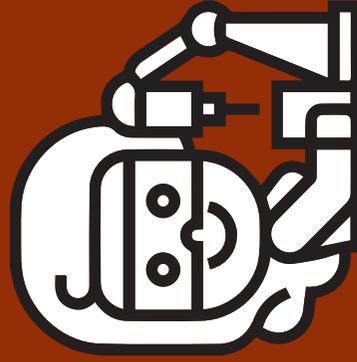
B

Supplier (mechanical engineering)

Circular business model pattern
for this role

B1 Machine/component 'as new'

B2 Machine/component remarketing



ROLE in
value creation

C

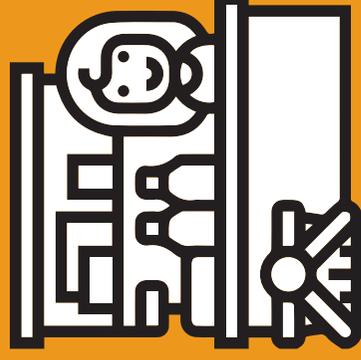
Producer

Circular business model pattern
for this role

C1 Proprietary material cycles

C2 Product 'as new'

C3 Used product remarketing



ROLE in
value creation

D

Retailer & service points

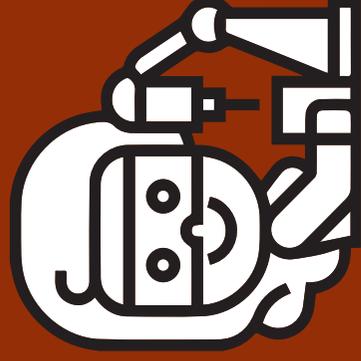
Circular business model pattern
for this role

D1 Retailer as cycle manager

D2 Retail remarketing & reman

D3 One-stop shop (retail)

PLEASE TURN OVER →



ROLE in
value creation



Producer

C4 Out-of-warranty repair service

C5 Upgrades, spares & accessories

C6 Maximising product uptime



ROLE in
value creation

E

Repair provider

Circular business model pattern
for this role

E1 Repair gap exploiter



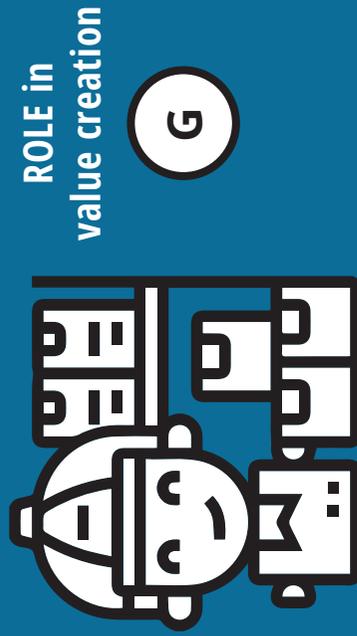
ROLE in
value creation

F

Prosumer

Circular business model pattern
for this role

F1 Prosumer support system



ROLE in
value creation

G

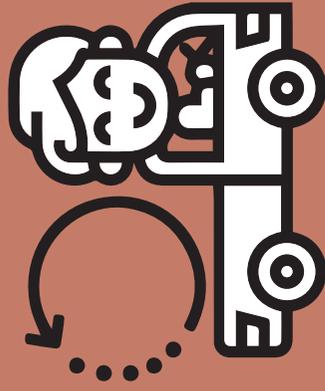
Logistics provider

Circular business model pattern
for this role

G1 Material reverse logistics

G2 Refurb logistics services

G3 Spare parts management



ROLE in
value creation

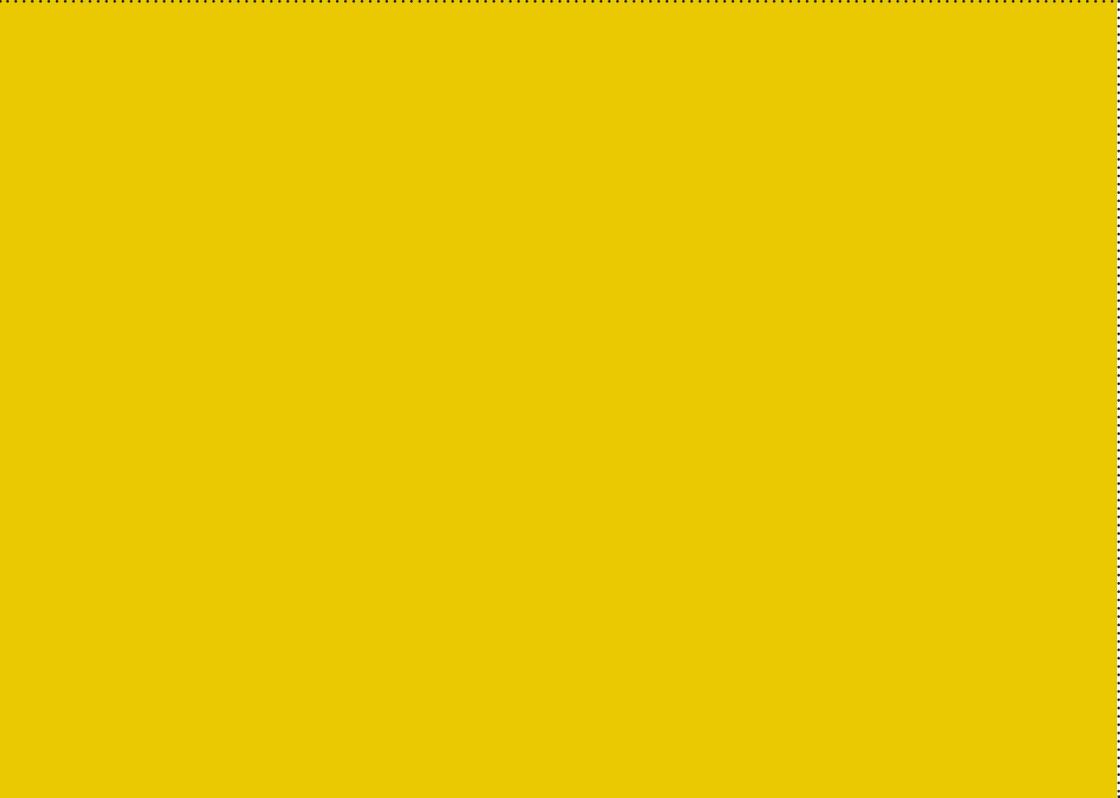
H

Recovery manager

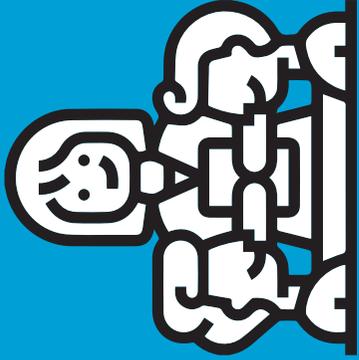
Circular business model pattern
for this role

H1 Revitalised products

H2 Coordinator of informal collection



ROLE in
value creation



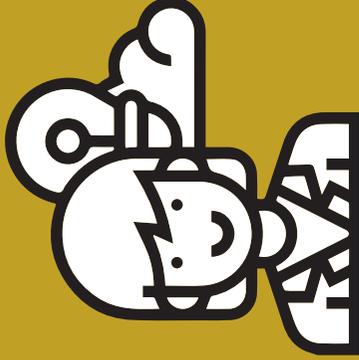
I

Intermediary

Circular business model pattern
for this role

- I1 Recycling platform
- I2 Used goods & sharing platform

ROLE in
value creation



J

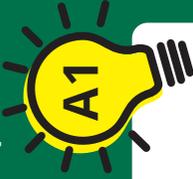
New roles

Time will tell:

Supporting roles such as non-technical service providers, banks and financial service providers, circular design agencies, certification bodies

Pattern > **CASE EXAMPLE** > Sub-pattern

Circular raw materials supplier



BOREALIS AG, AUSTRIA EverMinds Initiative and recycling acquisitions

Borealis AG, the 8th largest chemical producer of polyolefins (e.g. polyethylene (PE) and polypropylene (PP)) is a good example of a molecule/material recycling company.

In 2016, Borealis began to invest in several recycling facilities in Europe and has moved from supplying only virgin polyolefins to supplying both virgin and recycled polyolefins. It has since tapped into learning processes from its recycling operations, in particular regarding barriers to recycling. For instance, yellow plastic waste contaminated with cadmium (e.g. as a colouring agent or printing ink) hampers most applications for recyclates. This has led to major circular economy initiatives such as EverMinds in which, together with stakeholders

Pattern > **CASE EXAMPLE** > Sub-pattern

Process molecule service provider



SAFEICHEM – COMPLEASE™ Chemical Leasing, Germany

SAFEICHEM, founded in 1992 by Dow Chemicals and a waste management firm, is a service company focusing on the innovative use of chemicals in applications such as metal cleaning, textile cleaning, and asphalts analysis. It follows the molecule leasing and performance business model. High-quality chemicals (e.g. solvents) are provided as a system in closed containers, allowing for safe transportation, storage, and handling and so ensuring the highest possible health and safety standards. Customers buy a customised performance package for a monthly fee including for instance technical consultancy, high-performance solvents and additives, safe delivery and collection, waste analysis, on-site quality monitoring system and

documentation and training. Chemical leasing can achieve a reduction of up to 93% in solvent use and 50% in energy while improving health and safety. In a service alliance with equipment manufacturers, distributors, and waste managers, all customer and regulatory demands are met.

Source: www.safechem.com

More cases:
Unido Chemical Leasing Toolkit,
<https://chemicalleasing-toolkit.org/>

across the value chain, Borealis has, for instance, proposed new Circular Design Guidelines for plastic packaging in order to maximise the recovery of high-quality materials and enable higher performance use scenarios for recycled resources.

Source: www.borealiseverminds.com

Pattern > **CASE EXAMPLE** > Sub-pattern

Machine/component 'as new'



SKF »ROTATION FOR LIFE«, SWEDEN

SKF, located in Sweden, is the world's largest bearing manufacturer which and has recently embarked on a pay per reman performance business model. Bearings are crucial components in many kinds of machinery and plant. SKF has recently promoted a 'Rotation for Life' business model focusing on total cost of ownership in which payments are made on the basis of key performance indicators for the bearing. Bearings are digitally monitored, taken out once there is a risk of failure, replaced, and remanufactured.

Source: www.skf.com

Pattern > **CASE EXAMPLE** > Sub-pattern

Machine/component remarketing



RUBBLE MASTER RENTALS, AUSTRIA

Rubble Master is a leading producer of mobile recycling machines (e.g. crushers, sorters) for (de)construction waste. As well as selling new products, it operates a rental unit which gives customers access to a pool of products (i.e. rental machine business model). Rental includes training and wear, but no operation costs (e.g. fuel, operator) or transport. Some of the machines from the rental pool are later sold as used goods at lower prices so customers with smaller budgets can be served; this reveals the interre - latedness of rental and used goods business lines.

Source: www.rubblemaster.com

Pattern > **CASE EXAMPLE** > Sub-pattern

Machine/component 'as new'



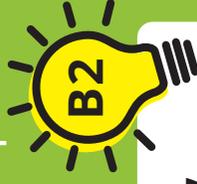
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Pattern > **CASE EXAMPLE** > Sub-pattern

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Source: www.rubblemaster.com

Pattern > **CASE EXAMPLE** > Sub-pattern

Proprietary material cycles



FROSCH BRAND'S RECYCLATE INITIATIVE, GERMANY

Werner & Mertz is a German producer of detergent and related consumer household chemicals and applies a business model similar to waste cherry picking. It has been an eco-pioneer since the introduction of the Frosch brand in 1986. More recently, it has completely redesigned its packaging range in line with cradle to cradle quality certification, which requires the removal of SoC from the (premium) packaging materials, related labels, and printing inks, enabling high-quality recycling streams. In a cross-value cycle partnership with a recovery manager (Grüner Punkt), mechanical engineering company (UNISENSOR), converter (ALPLA), retailer (REWE), and NGO (NABU), Werner & Mertz has developed and commer-

Pattern > **CASE EXAMPLE** > Sub-pattern

Product 'as new'



SMART METER REMANUFACTURING, INSTRUMENT MANUFACTURER LORENZ, GERMANY

Lorenz sells or leases smart meters to households (via intermediary organisations such as building management providers). The meters are designed for several use cycles, after which they are uninstalled and returned to the producer. As a financial incentive, customers receive a payment for each product returned. The smart meters are then disassembled and refabricated using specialised machinery. This is possible thanks to the product having been developed according to design for remanufacturing and modularity principles.

Source: www.lorenz-meters.de

More cases:

UMAC (EREMA Group) Used recycling machines

More cases:

**TRUMPF Pre-Owned Machines;
Liebherr Reman**

More cases:

**Apple 'Refurbished' (e.g. smartphones);
Caterpillar Reman (heavy equipment/vehicles)**

cialised premium recycled material (e.g. PET) and product streams. While recycling streams are not brand exclusive (i.e. packaging from multiple brands is retrieved) and thus not strictly proprietary, new R&D projects on tracer-based sorting are clearly showing the way forward.

Source: wir-fuer-recyclat.de; initiative-frosch.de

More cases:

Clarios (lead-acid batteries);

MUD Lease-a-Jeans;

Wolford 'Aurora' biodegradable Cradle-to-Cradle-Collection

Pattern > **CASE EXAMPLE** > Sub-pattern

Used product remarketing



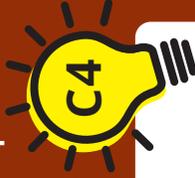
PATAGONIA WORN WEAR ONLINE-SHOP, USA

Patagonia is a producer of high-quality outdoor clothing designed for long use under extreme outdoor conditions and was founded in 1973 on a sustainability mission.

With its own shops in key cities, it builds a close relationship with customers and these shops offer local repair services. Patagonia's 'Don't buy this jacket' marketing campaign has made it widely known for its anti-consumerism approach. After a series of local 'Worn Wear' pop-up events, the company launched a permanent online store for used clothes and has sold more than 120,000 items since. Perfectly functioning items in good condition are traded-in in Patagonia's own stores or via mail with contributors receiving discounts on new purchases. Clothes are washed and put online for remarketing.

Pattern > **CASE EXAMPLE** > Sub-pattern

Out-of-warranty repair service



MIELE, GERMANY

Miele is a German manufacturer of white goods and other household electronics. With a reputation for high-quality consumer durables and a strong service culture, it has maintained premium prices on the market. Miele products, produced in both Europe and China, have considerably longer lifetimes than competitor products. With local retail and service partners in major cities, Miele remains close to its customers. Full customer support in local sales outlets is a key commercial differentiator. Repair and maintenance contracts can be agreed locally and are backed up by centralised online offerings. Individual components of products can usually be replaced when broken or worn and minor software upgrades can be carried out.

Source: www.miele.de

Pattern > **CASE EXAMPLE** > Sub-pattern

Upgrades, spares & accessories



FAIRPHONE'S ONLINE SHOP FOR SPARE PARTS, THE NETHERLANDS

Fairphone, founded in 2013, is a social enterprise with the mission to transform the electronics industry. By introducing alternative smartphones onto the market, it showcases new supply chain practices (e.g. fairly traded gold) and product designs (e.g. replaceable batteries), as well as fostering sustainability. The 3rd generation design, Fairphone 3, has recently been introduced. The modular phone is shipped with a screwdriver, with which the phone can be easily disassembled by consumers into seven main modules (e.g. battery, display, mainboard, camera, speaker, microphone). Fairphone's online shop follows the modules & accessories business model, as it provides replacements for each of these modular components.

Pattern > **CASE EXAMPLE** > Sub-pattern

Maximising product uptime



HILTI FLEET MANAGEMENT, LIECHTENSTEIN

Hilti is a leading manufacturer and service provider for premium construction tools such as drilling machines offered in business-to-business construction markets. Tools are built to last through design for longevity and are rooted in a service culture, complemented with a wide range of services, including repairs.

Hilti Fleet Management Service, established over 10 years ago and currently covering more than 100,000 customers, is a total care business model offering tools-as-a-service. This full-service package covers all tools required by a customer including their use, service, repair, and upgrading for a fixed period of time and a monthly fee. If additional tools are required beyond the plan, they can be rented or purchased separately.

Pattern > **CASE EXAMPLE** > Sub-pattern

Maximising product uptime

More cases:

Deuter 'Lifelong repair service' for outdoor equipment;
VAUDE 'Repair, don't replace' for outdoor clothing and equipment

keting. Patagonia has recently also opened physical pop-up stores for Worn Wear.

Source: www.wornwear.patagonia.com

More cases:

SHIFT Phones (e.g. smartphones);
Samsung Certified Pre-Owned (US)

can be rented temporarily. Recently, an Internet-of-Things initiative has increased the connectedness of their tools, enabling detailed monitoring and preventive maintenance. By making sure that tools are being maintained, personnel health and safety is also assured.

Source: www.hilti.group

More cases:

Ricoh Managed Print Services;
Rolls-Royce TotalCare;
BlueMovement powered by Bosch;
the Netherlands

les, as well as for normal accessories (e.g. chargers, cases).

Source: www.fairphone.com

Pattern > **CASE EXAMPLE** > Sub-pattern

Retailer as cycle manager



SCHWARZ GROUP'S 'RESET PLASTIC' STRATEGY, GERMANY

The Schwarz Group, owner of Lidl and Kaufland and considered Europe's largest retail chain, launched the 'Reset Plastic' strategy in 2018. It is an ambitious cross-value chain strategy based on vertical integration into waste and materials management with the goal of introducing 100% recyclable packaging and reducing plastic waste.

As a first building block, the Schwarz Group founded the waste management companies GreenCycle in 2009 (for managing group internal wastes) and the digital waste management platform PreZero in 2018 (to serve external partners in the market). Furthermore, starting in 2018, the Group acquired two recycling operations: Tönsmeier in Germany and Sky Plastic

Pattern > **CASE EXAMPLE** > Sub-pattern

Retail remarketing & remain



AFB SOCIAL & GREEN IT, GERMANY

AfB was founded in 2004 as a social business for IT remarketing with the mission to integrate people with disabilities (and special abilities) into skilled work processes.

AfB owns operations in Germany and Austria, 13 logistics operations with attached shops and two stand-alone shops. Used or discarded IT equipment is picked up from partners' sites and returned to the logistics centres, where it is prepared for remarketing (e.g. data deletion). Functioning devices are refurbished (i.e. cleaned and then repaired where necessary) while other devices are prepared for recycling. Used devices are then given to the attached shops for direct sales or promoted in the online shop, representing the Used goods on sale business model. Customer

Pattern > **CASE EXAMPLE** > Sub-pattern

One-stop shop (retail)



TELEKOM TERMINAL EQUIPMENT SERVICE PACKAGE

Telekom, Germany's largest telecommunication provider, follows a rental retail business model by offering devices such as DSL modems (in support of Internet services) to customers for a rental fee as part of the overall service contract (e.g. Internet and/or telephony provision). Devices can be returned to service points for repair, upgrading, or disposal. In the latter case, they are then refurbished or recycled.

Source: www.telekom.de

More cases: Expert repair service (electrical and electronic goods retail)

Pattern > **CASE EXAMPLE** > Sub-pattern

Repair gap exploiter



AKKUTAUSCHEN.DE, GERMANY

Akkutauschen.de is a large online service offering to replace batteries from various types of consumer electronics (e.g. toothbrushes, shavers, e-bikes) utilises the repair transaction business model. It additionally runs an online shop for spare parts and provides online repair manuals for self-help. Founded in 2009, today the company processes several thousand devices each year, thereby contributing significantly to the repair and extended use of goods. Every battery exchange job comes with minor maintenance and related repair activities (e.g. replacement of seals). An autonomous actor, the firm works without official relationships to producers. The service also contributes to recycling, because (waste) batteries and broken electrical devices are professionally prepared and disposed of.

Pattern > **CASE EXAMPLE** > Sub-pattern

Repair gap exploiter



groups for used devices include both consumers and business customers alike.

Source: www.afb-group.de

More cases:

Amazon Refurbished & Used products;
Rent-a-Wreck (car rental)

Group AG in Austria. The Group is the first re-tailer capable of coordinating material streams across the value chain through vertical integration into recovery management and recycling.

Source: www.reset-plastic.com

Source: www.akkutauschen.de

More cases:
Reparando (Smartphones)

Pattern > **CASE EXAMPLE** > Sub-pattern

Prosumer support system



IFIXIT, USA

The private company iFixit, founded in 2003 in California, the US, follows a do-it-yourself repair business model by providing online user repair guidelines and selling related spare parts and repair tools/toolkits. iFixit operates an online repair community with more than 1 million users. The company is a strong promoter of the 'right to repair' movement, which has initiated several legislative initiatives to promote own repairs by users.

Source: www.ifixit.com

More cases: RepaNet (Austria); Netzwerk Reparatur-Initiativen

Pattern > **CASE EXAMPLE** > Sub-pattern

Material reverse logistics



INTERSEROH ZERO WASTE SOLUTIONS AND »RECYCLED-RESOURCE«, GERMANY

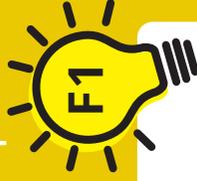
Interseroh is an integrated service provider for the circular economy covering logistics and transport, waste management, sorting, recycling and plastic reprocessing operations, and secondary raw materials trading. Interseroh's 'Recycled-Resource' process for reconditioning waste plastics has led to the introduction of two recycled grades, Recythen and Procylen, for various applications.

Source: www.interseroh.de

More cases:
RLG/CCR REBAT (batteries)

Pattern > **CASE EXAMPLE** > Sub-pattern

Prosumer support system



IFIXIT, USA

The private company iFixit, founded in 2003 in California, the US, follows a do-it-yourself repair business model by providing online user repair guidelines and selling related spare parts and repair tools/toolkits. iFixit operates an online repair community with more than 1 million users. The company is a strong promoter of the 'right to repair' movement, which has initiated several legislative initiatives to promote own repairs by users.

Source: www.ifixit.com

More cases: RepaNet (Austria); Netzwerk Reparatur-Initiativen

Pattern > **CASE EXAMPLE** > Sub-pattern

Material reverse logistics



INTERSEROH ZERO WASTE SOLUTIONS AND »RECYCLED-RESOURCE«, GERMANY

Interseroh is an integrated service provider for the circular economy covering logistics and transport, waste management, sorting, recycling and plastic reprocessing operations, and secondary raw materials trading. Interseroh's 'Recycled-Resource' process for reconditioning waste plastics has led to the introduction of two recycled grades, Recythen and Procylen, for various applications.

Source: www.interseroh.de

More cases:
RLG/CCR REBAT (batteries)

Pattern > **CASE EXAMPLE** > Sub-pattern

Prosumer support system



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More cases: RepaNet (Austria); Netzwerk Reparatur-Initiativen

Pattern > **CASE EXAMPLE** > Sub-pattern

Refurb logistics services



RLG CYCLEON REFURBISH & RESELL, THE NETHERLANDS

Cycleon, a subsidiary of the Reverse Logistics Group, offers a refurbishment programme which aims to maximise value from product returns originating either from retailers or directly from consumers. Data-based screening and quality control of returned goods enable smart decisions on the best possible reutilisation scenario with the aim of generating the greatest possible quality of returned items: from refurbishment to 'as new' condition (includes repair, polishing, repackaging), to direct reuse, or material recycling. Reused or refurbished goods are either returned to the distribution centres of the client (i.e. a producer or retailer), or directly resold in B2B or B2C online markets.

Pattern > **CASE EXAMPLE** > Sub-pattern

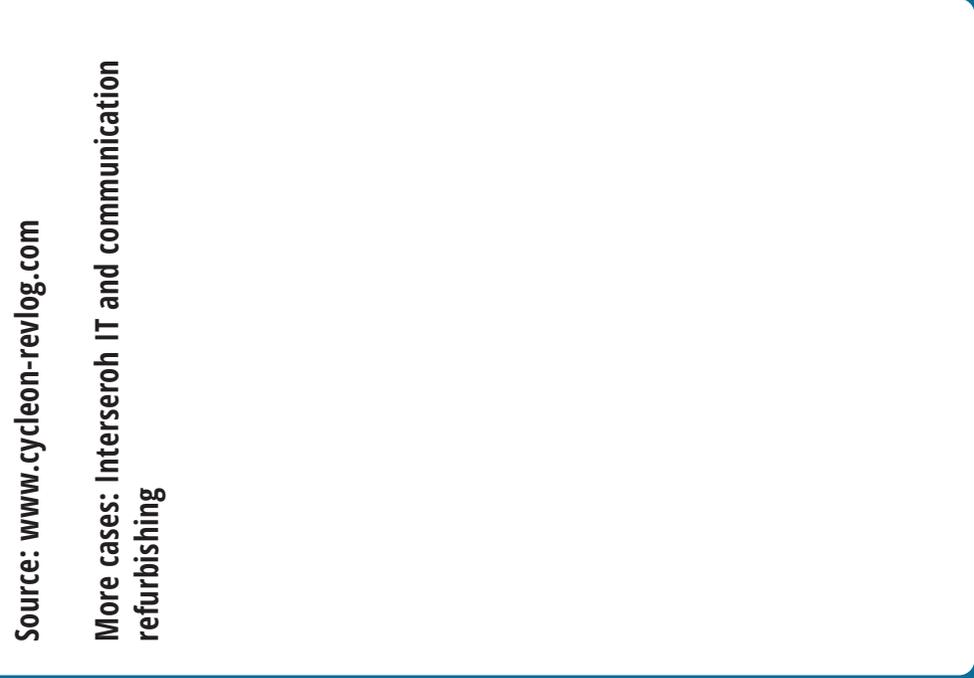
Ersatzteillogistik



TGW SPARE PARTS & COMPONENTS, AUSTRIA

TGW provides intralogistics solutions for sectors such as fashion, grocery, industrial, and consumer goods under contract as part of a client's outsourcing efforts. TGW's Spare Parts & Component programme covers spare parts delivery as well as on-site and return-to-base repairs, returns, exchanges, and recycling. TGW not only supports circular operations such as client repairs, but also runs its own services in a circular fashion. Their 'Lifetime Services' package contains condition-based smart maintenance services, repair, and consultancy regarding the intralogistics system provided to the client.

Source: www.tgw-group.com



Source: www.cycleon-revlog.com

More cases: Interseroh IT and communication refurbishing



Revitalised products

RETUNA ÅTERBRUKSGALLERIA, SWEDEN

ReTuna is the world's first recycling mall, revolutionising shopping in a climate-smart way. It is operated by the municipality. Old items are given new life through repair and upcycling. Everything sold is recycled or reused. Additionally, ReTuna aims to be a public educator (e.g. events, workshops). The mall opened its doors in 2015 and is located next to the ReTuna recycling centre. It is easy for visitors to sort materials they are discarding into the containers and then drop off reusable toys, furniture, clothes, decorative items, and electronic devices in the mall's depot, called 'Returen'. In the depot, staff of the municipality perform an initial culling of what is usable and what is not.

The items are then distributed to the recycling



Coordinator of informal collection

MR. GREEN AFRICA

The future of recycling will be changed by alleviating the marginalisation, suffering, and large-scale disadvantage of informal waste pickers and their communities.

Mr. Green Africa incentivises marginalised waste pickers and base of the pyramid stakeholders with premium prices and added benefits, to provide a continuous supply of valuable recyclables which in turn creates pathways out of poverty for them, while simultaneously creating a positive environmental impact. Mr. Green Africa then processes the recyclable material into valuable raw material and feeds it back into plastic manufacturers' supply chain to enable them to achieve their circular economy goals, and benefit from raw material cost savings.



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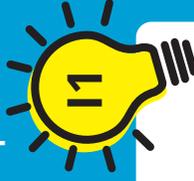


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Recycling platform

CIRPLUS, GERMANY

cirplus is a global marketplace for recycles and plastic waste feedstock which is on a mission to make buying and selling recycled plastics easier and more efficient than before. This B2B marketplace links the plastics and recycling industries. The core focus of cirplus is to improve the qualities and quantities of recycled plastics. Additional consultancy services are offered to support companies along the value chain, for example in improving feedstocks, product design for recycling or material flows.

Source: www.cirplus.com



Used goods & sharing platform

EBAY CLASSIFIED, GERMANY

eBay Classified, known in Germany as eBay Kleinanzeigen, is a used goods platform business model in which consumers can offer used goods for sale as well as other characteristics of the item. The buyer contacts the seller, and together they finalise the transaction outside the eBay platform (i.e. the platform is just the matchmaker, but does not engage in the further transaction process).

Source: www.ebay-kleinanzeigen.de

Source: www.mrgreenafrica.com

shops in the mall. The shop staff then perform a second culling, where they choose what they want to repair, fix up, convert or refine – and ultimately sell. In 2018, ReTuna generated SEK 11.7 million in sales of recycled products.

Source: www.retuna.se

More cases:
ReVital products, logo and shops (Austria)

More cases:
www.floow2.com (B2B asset sharing)

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

A1.1

Molecule & material recycling

Service level of this business model

1

2

3

Conventional suppliers build partnerships ('ally') or vertically integrate ('make') into recovery businesses.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

A1.2

Materials bank

Service level of this business model

1

2

3

In this service business model, suppliers manage a material pool across the entire value cycle. Materials remain the property of the supplier and are provided via leasing contracts to downstream actors in the value cycle, each actor passing the materials onwards. At the end of the (end-users') use phase, materials are returned to the bank and upcycled.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

A2.2

Molecule & material leasing

Service level of this business model

1

2

3

Suppliers retain ownership of the molecules/materials and sell their use by providing a solution (i.e. materials plus equipment), with the duration and frequency of use determining the leasing fee. The customer is responsible for controlling and monitoring the system in use. (Return) logistics may be complementary or optional.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

A2.3

Molecule & material performance

Service level of this business model

1

2

3

Suppliers retain ownership of the molecules/materials. They sell the function performed by the molecule/material with the functional units being the basis for payment. Maximum performance can be achieved by making use of supplier expertise for configuring, monitoring, maintaining, and optimising the materials during use.

PLEASE TURN OVER →

Further information

In this closed-loop recycling system, the bank can coordinate and track materials along the value cycle, thus ensuring high-quality collection and reuse for the same application.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (mechanical engineering) (role B)

Producer (role C)

Retailer & service points (role D)

Prosumer (role F)

Logistics provider (role G)

Recovery providers (role H)

Further information

Circular potential resides in accessing recycling materials towards the end of products' life cycle through investment in collection and recovery systems. This is limited to open-loop recycling, as there is a lack of control of the activities between raw materials being placed on the market and being collected from the final user.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Recovery providers (role H)

Further information

Using supplier expertise throughout material application ensures optimal maintenance and efficiency and thus maximum performance. Suppliers have a financial incentive to prevent material deterioration and waste. Optimised use phases allow materials to be taken back in the best possible condition as required for subsequent treatment (e.g. recycling, disposal).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (mechanical engineering) (role B)

Logistics provider (role G)

Recovery providers (role H)

Further information

As ownership is retained, investment in high quality materials becomes a business case. The provision of a closed-loop system (molecules/materials + equipment) enables continuous maintenance to maximise longevity. Mandatory return (take-back) of the system at the end of the leasing period ensures proper recycling (or disposal) of molecules/materials.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (mechanical engineering) (role B)

Logistics provider (role G)

Recovery providers (role H)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B1.1

Machines/components 'as new'

Service level of this business model

1

2

3

Machines/components are sold in traditional form. Take-back system and infrastructure are offered.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B1.2

Rental machines/components 'as new'

Service level of this business model

1

2

3

Machines are rented or leased out instead of sold. Ownership is not transferred to the customer. Customer relationships intensify over entire use phase.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B1.3

Pay per reman machine performance

Service level of this business model

1

2

3

Remanufactured machines/ components are offered as a service to customers. They are closely monitored and analysed for their performance and are modified or replaced when appropriate in the light of total cost of ownership.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B2.1

Used machines/ component sales

Service level of this business model

1

2

3

Used machines/components are sold at lower costs compared to their new counterparts.

PLEASE TURN OVER →

Further information

Rented/leased machines will usually come back to the owner after contract ends (or significant penalties apply). Scheduled take-back quantities and timeframes mean that remanufacturing processes and associated procurement of further materials/components can be optimally planned.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Logistics provider (role G)

Further information

Financial incentives (e.g. reduced price for repeat sales; deposit) are offered in order to get products back. However, despite incentives, return of products cannot be ensured and related planning is difficult.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Logistics provider (role G)

Further information

Financial incentives (e.g. reduced price for repeat sales; deposit) are offered in order to get products back. Reuse transactions depend on whether customers use the incentives offered by suppliers to actually return machines/components. Customers may, however, prefer to sell them on the second-hand market themselves, with goods then leaving the control of the supplier.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Logistics provider (role G)

Further information

This service business model leads to higher return levels because machines/components remain in the ownership of the supplier and are returned at the end of the service contract. Furthermore, suppliers will strive to optimise performance and integrate maintenance and repair to provide learning in use and feedback for research and development and associated product designs.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Logistics provider (role G)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B2.2

Rental machines/components

Service level of this business model

1

2

3

A rental business for used machines/components is introduced. Customers pay rental fees with competitive pricing. Customers may be provided with complementary or optional services for maintenance, repair, and upgrading. Penalties must be paid for inappropriate use, wear and damage.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

B2.3

Pay per reman machine performance

Service level of this business model

1

2

3

Remanufactured machines/ components are offered as a service to customers. They are closely monitored and analysed for their performance and are modified or replaced when appropriate in the light of total cost of ownership.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

C1.1

Waste cherry picking

Service level of this business model

1

2

3

Producers arrange partnerships with recovery managers for the exclusive extraction of primary materials from pre-sorted waste streams (e.g. based on optics, tracers, digital watermarks, or even manual picking). In a more radical step forward, producers could, similar to circular raw materials suppliers (A1), vertically integrate into recovery operations to get direct access to waste streams.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

C1.2

Materials bank partnership

Service level of this business model

1

2

3

Producers maintain ownership of their specific premium materials (or components).

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

C1.2

Materials bank partnership

Service level of this business model

1

2

3

Producers maintain ownership of their specific premium materials (or components).

PLEASE TURN OVER →

Further information

This service business model leads to higher return levels because machines/components remain in the ownership of the supplier and are returned at the end of the service contract. Furthermore, suppliers will strive to optimise performance and integrate maintenance and repair to provide learning in use and feedback for research and development and associated product designs.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Logistics provider (role G)

Further information

Given that ownership is retained by the supplier, all products are returned at defined times, allowing for better planning and management of the rental pool. Suppliers' own maintenance and repair of the returned products makes products last longer. Unfit machines/components can be cannibalised for spare parts and systematically prepared for recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Logistics provider (role G)

Further information

As the ownership of materials (incorporated in products) remains with the producer (or is managed by a materials bank as in A1), once the product's (fixed) period of service is complete, materials are returned to or taken back by the producer (as a part of the service package).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)
Retailer & service points (role D)
Recovery providers (role H)

Further information

Only possible for materials which the local collection and sorting facilities can clearly identify, or which can be manually collected with acceptable levels of effort. High material losses from the 'closed' loops are to be expected, due to mixed waste streams out of the producer's control.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Recovery providers (role H)

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C2.1

Selling Products 'as new'

Service level of this business model

1

2

3

Remanufactured products are sold in the same way as new products, but on more competitive terms (i.e. lower price tags).

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C2.2

Product leasing 'as new'

Service level of this business model

1

2

3

Customers lease (or rent) products 'as new' for a monthly fee. The leasing product pool consists mainly of remanufactured products, but is stocked with new products, without the customer being able to tell the difference. Producers need to establish an own-product pool and financing schemes for their customers or partner with fleet operators and external banks.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C2.3

Total care producer

Service level of this business model

1

2

3

Instead of a specific product, a result or performance is sold to the customer. The provider can choose (used) products/technologies which deliver the best result and has full responsibility for their deployment, maintenance (incl. consumables), repair, replacement and take-back.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C3.1

Used product sale

Service level of this business model

1

2

3

As well as new products, producers sell used products at lower prices as a form of differentiation. As sales are complemented with quality guarantees and warranties, customer awareness and confidence considerably increase, making used goods true alternatives. Trade-in programmes provide financial incentives to customers to return used products, with the value deducted from further purchases.

PLEASE TURN OVER →

Further information

As ownership remains with the producer, all products are returned at defined times. This enables precise planning of the subsequent reman processes and the size of the product pool. It also enables better product (and user) monitoring, which can increase (and ensure a minimum) quality of returned products and so ensure that remanufacturing is possible at the lowest possible cost.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Prosumer (role F)

Further information

Financial incentives (e.g. reduced price for repeat sales; deposit) are offered in order to get products back. Reuse transactions depend on whether customers use the incentives offered by suppliers to actually return products. Customers may, however, prefer to sell them on the second-hand market themselves, with goods then leaving the control of the producer.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Prosumer (role F)

Further information

Used product lines enable additional use cycles of products which have not reached end of life. However, while financial incentives to return used products exist, it is not the only option customers have and therefore only a fraction of goods are returned. Disused products often remain stored in households or are sold in non-proprietary used goods markets.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Logistics provider (role G)

Further information

- Ensuring the correct time intervals for maintenance activities in order to maximise lifetime.
- Leveraging synergies from maintenance/repair activities by reusing components and materials.
- Ensuring take-back after service ends as the basis for deployment at other customers' sites, remarketing or recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Prosumer (role F)

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C4.1

On-demand repair

Service level of this business model

1

2

3

Optional repair services are provided in addition to conventionally sold goods with the aim of enabling extended use (instead of repeat purchases). Customers contact the producer's service centre on demand when a repair is necessary. Either customers pay a fixed annual service fee covering a range of repairs, or each repair transaction is paid for individually.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C4.2

Leasing producer

Service level of this business model

1

2

3

Products are leased out, rented, or shared. Producers become fleet managers facing significant investment in infrastructure. By retaining ownership, maintenance, repair, and replacement can be monitored and timed according to the business and circular needs of the producer.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C4.3

Total care producer

Service level of this business model

1

2

3

Instead of a specific product, a result or performance is sold to the customer. The provider can choose (used) products/technologies which deliver the best result and has full responsibility for their deployment, maintenance (incl. consumables), repair, replacement and take-back.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C5.1

Modules & accessories shop

Service level of this business model

1

2

3

Producers offer spare parts as a traditional sales transaction. Own direct sales channels or partnerships with existing retail and service points (online or offline) are used for customer contact.

PLEASE TURN OVER →

Further information

With ownership maintained during use, producers get more frequent and more reliable access to the product. They collect more knowledge about user practices and product-in-use performance. This can feed back into product R&D and related redesign.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Prosumer (role F)

Further information

Attractive repair offerings enable customers to use products longer. As the key contact when products fail, producers can coordinate informed decisions to repair or replace devices. Taking back broken products/components means spare parts can be cannibalised or remanufactured and fed back into repair operations or, alternatively, products/components can be professionally prepared for recycling (e.g. disassembly).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Repair provider (role E)
Prosumer (role F)
Logistics provider (role G)

Further information

Provision of spare and upgrade modules supports decentralised repairs and upgrading with the ultimate aim of increasing a core product's longevity.

Apart from the module sales transaction, the repair and upgrading processes remain strongly in the domain of the customers with little feedback to the producer, who misses learning opportunities arising from a product's shortcomings.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Repair provider (role E)
Prosumer (role F)

Further information

- Ensuring the correct time intervals for maintenance activities in order to maximise lifetime.
- Leveraging synergies from maintenance/repair activities by reusing components and materials.
- Ensuring take-back after service ends as the basis for deployment at other customers' sites, remarketing or recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)
Prosumer (role F)

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C5.2

Upgrade subscription

Service level of this business model

1

2

3

New technological or non-technological modules/parts, which remain in the ownership of the producer, are provided as a service to enable upgrading of customers' core devices at defined intervals. Modules are returned once replacement upgrades are provided or customers no longer need them. New modules are provided to high-performance users and then cascaded to users with lower needs.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C6.1

Fee-based maintenance

Service level of this business model

1

2

3

Products are still being sold in traditional ways, but with mandatory service agreements including maintenance (optional repair).

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C6.2

Leasing producer

Service level of this business model

1

2

3

Products are leased out, rented, or shared. Producers become fleet managers facing significant investment in infrastructure. By retaining ownership, maintenance, repair, and replacement can be monitored and timed according to the business and circular needs of the producer.

PLEASE TURN OVER →

Pattern > Case example > **SUB-PATTERN**



Business model
sub-pattern

C6.3

Total care producer

Service level of this business model

1

2

3

Instead of a specific product, a result or performance is sold to the customer. The provider can choose (used) products/technologies which deliver the best result and has full responsibility for their deployment, maintenance (incl. consumables), repair, replacement and take-back.

PLEASE TURN OVER →

Further information

Maintenance interventions enable regular access to the product-in-use. However, given that maintenance intervals are long and usually driven by customers, interventions may come too late to secure components for remanufacturing or even prevent product or component failure.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Prosumer (role F)

Further information

Extended use of core product is facilitated through preventive and technology upgrades. With producers retaining ownership of modules, opportunities arise for component and (core) device monitoring, which enables preventive maintenance. Risks of component-level fashion obsolescence or 'upgrade consumerism' need to be contained (eco impacts of cumulative upgrades vs. core product).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)

Repair provider (role E)

Prosumer (role F)

Logistics provider (role G)

Further information

- Ensuring the correct time intervals for maintenance activities in order to maximise lifetime.
- Leveraging synergies from maintenance/repair activities by reusing components and materials.
- Ensuring take-back after service ends as the basis for deployment at other customers' sites, remarketing or recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)

Prosumer (role F)

Further information

With ownership maintained during use, producers get more frequent and more reliable access to the product. They collect more knowledge about user practices and product-in-use performance. This can feed back into product R&D and related redesign.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Retailer & service points (role D)

Prosumer (role F)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D1.1

Retailer as cycle manager

Service level of this business model

1

2

3

Retailers adopt a proactive role in managing packaging and related materials. Materials (in the form of packaging) and their ownership are passed on, but different degrees of vertical integration mean that their flow can be coordinated along the cycle.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D1.2

Materials bank partnership

Service level of this business model

1

2

3

Producers maintain ownership of their specific premium materials (or components).

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D2.1

Used goods on sale

Service level of this business model

1

2

3

Used goods are still sold under a conventional transactional model, but at lower prices. Customers can trade-in used devices.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D2.2

Rent-a-wreck fleet manager

Service level of this business model

1

2

3

Specialised service provider for the rental of used goods at lower prices as compared to more conventional offerings.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D2.2

Rent-a-wreck fleet manager

Service level of this business model

1

2

3

Specialised service provider for the rental of used goods at lower prices as compared to more conventional offerings.

PLEASE TURN OVER →

Further information

As the ownership of materials (incorporated in products) remains with the producer (or is managed by a materials bank as in A1), once the product's (fixed) period of service is complete, materials are returned to or taken back by the producer (as a part of the service package).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)

Retailer & service points (role D)

Recovery providers (role H)

Further information

Under the coordination of the retailer, recycling turns from somewhat open loops into more closed loops. This enables more effective recycling in terms of quantity and quality. A strong influence on producers putting materials into the market enables better design for recycling, and may lead to a virtuous cycle, continuously improving the system.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)

Producer (role C)

Prosumer (role F)

Logistics provider (role G)

Recovery providers (role H)

Intermediary (role I)

Further information

With ownership retained by the retailer or fleet manager, which is then operating a pool of used products, products can be maintained and their lifetime extended to a maximum degree. Spare parts can be harvested, reused, and refurbished, further contributing to life extension.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Prosumer (role F)

Logistics provider (role G)

Further information

Given the transactional sales model, this business model often only leads to a single further use cycle. While the retailer could potentially take used goods back again, customers often do not return the goods due to the absence of financial incentives.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Prosumer (role F)

Logistics provider (role G)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D3.1

Integrated service point

Service level of this business model

1

2

3

Complementary or optional maintenance, repair, and insurance service components are sold together with the core product under a conventional transactional sales model.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D3.2

Rental retail

Service level of this business model

1

2

3

The retailer leases or rents out products for a monthly fee and keeps ownership and responsibility for maintenance, repair, upgrading, and take-back. Customers profit from accessibility to most recent products.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D3.3

Total care retail

Service level of this business model

1

2

3

Instead of a specific product, a result or performance is sold to the customer. The provider can choose (used) products/technologies which best deliver the result and has full responsibility for deployment, maintenance (may include consumables), repair, replacement and take-back.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

D3.3

Total care retail

Service level of this business model

1

2

3

Instead of a specific product, a result or performance is sold to the customer. The provider can choose (used) products/technologies which best deliver the result and has full responsibility for deployment, maintenance (may include consumables), repair, replacement and take-back.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

E1.1

Repair transaction

Service level of this business model

1

2

3

Repair services are provided with the aim of enabling extended use (instead of new purchases). Customers contact the service point as required when a repair is necessary.

PLEASE TURN OVER →

Further information

The retailer becomes a fleet operator. Professional maintenance and repair maximises product lifetime. Once products retire, they can be professionally prepared for appropriate recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Prosumer (role F)

Further information

With the same point of contact and service offerings linked to or included in the original product purchase, complexity and transaction costs are reduced for the customer, and it becomes more likely that customers will return products for maintenance, repair and related services. This maximises product lifetime and environmental benefits.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Repair provider (role E)
Prosumer (role F)

Further information

Repair services address premature technical obsolescence and can significantly contribute to extended use cycles and product lifetimes. This considerably reduces the environmental impact of consumption. Single repair transactions may suffer from expensive fees and low customer acceptance, particularly when offered through official producer-related partnerships in which producers focus on repurchases rather than life extension.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Prosumer (role F)

Further information

- Ensuring the correct time intervals for maintenance activities in order to maximise lifetime.
- Leveraging synergies from maintenance/repair activities by reusing component and materials.
- Ensuring take-back after service ends as the basis for deployment on other customers' sites, remarketing or recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Prosumer (role F)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

F1.2

Repair-based rental

Service level of this business model

1

2

3

Autonomous 3rd-party service providers repair goods at own cost and use the initial repair request only as a basis for providing a use-based service for (repaired) products, thereby entering the realm of relational selling. All repair-related risks – such as repair success, actual costs of repair, long-term reliability of repaired goods, and potentially necessary follow-up repairs – are assumed by the provider.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

F1.1

Do-it-yourself repair

Service level of this business model

1

2

3

Own products are maintained and repaired (or even upgraded) for as long as possible and may subsequently be repurposed. In support of these self-help activities, commercial and non-commercial offerings address users' need for knowledge (e.g. 'how to repair' advice from online sources or local experts), spare parts, and tools. For instance, spare parts may be 3D printed in community centres or obtained from professional suppliers.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

F1.2

Repair-based rental

Service level of this business model

1

2

3

Autonomous 3rd-party service providers repair goods at own cost and use the initial repair request only as a basis for providing a use-based service for (repaired) products, thereby entering the realm of relational selling. All repair-related risks – such as repair success, actual costs of repair, long-term reliability of repaired goods, and potentially necessary follow-up repairs – are assumed by the provider.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

F1.1

Do-it-yourself repair

Service level of this business model

1

2

3

Own products are maintained and repaired (or even upgraded) for as long as possible and may subsequently be repurposed. In support of these self-help activities, commercial and non-commercial offerings address users' need for knowledge (e.g. 'how to repair' advice from online sources or local experts), spare parts, and tools. For instance, spare parts may be 3D printed in community centres or obtained from professional suppliers.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

F1.2

Peer-to-peer sharing

Service level of this business model

1

2

3

In this non-commercial approach, users provide goods to other users for a lump-sum fee. While this model has its origin in the offline world, most transactions have to date taken place through sharing platforms (see intermediary business models).

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

G1.3

Pay per recycling logistics performance

Service level of this business model

1

2

3

Based on a client's outsourcing, service providers manage activities and optimise reverse material flows for the maximum economic and/or environmental value. Specific payments may be linked to the amount of material processed or recovered, or the economic value generated from reselling. Profit sharing from reselling activities can align incentives and allows for a win-win situation for both clients and providers.

PLEASE TURN OVER →

Further information

Own products are maintained and repaired (or even upgraded) for as long as possible. After the use cycle, they may be forwarded to other users in the community for second use. As a result, product lifetime is maximised and repurchases are minimised.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Repair provider (role E)
Intermediary (role I)

Further information

Many repair transactions do not take place due to users' reluctance to pay (excessively high) repair fees. With 'rental repair', all repair-related risks are assumed by the provider and no (high) upfront repair costs are necessary, making users more likely to return goods for repair. This increases the market for repairs.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Repair provider (role E)
Prosumer (role F)

Further information

When providers specialise in reverse flows from various clients and value chains, they can generate the necessary economies of scale to make them economically viable and thereby enlarge the market for recycles. Through the incentive system incorporated in the service contract, economic and environmental benefits should align in principle. Still, the most economically beneficial recycling activities do not necessarily unearth the full environmental potential.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)
Producer (role C)
Retailer & service points (role D)
Prosumer (role F)
Recovery providers (role H)
Intermediary (role I)

Further information

With sharing, products are used more intensively (less idle time) and a smaller total number of products is needed on the market. In principle, this enables the procurement of higher quality products, because investment pays off sooner.

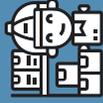
Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Intermediary (role I)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

G2.3

Pay per refurb performance

Service level of this business model

1

2

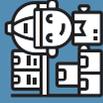
3

As part of a client's outsourcing, service providers optimise reverse product flows for maximum economic and/or environmental value. Specific payments may be linked to the number of items processed, the number of refurbished items, or the economic value generated from reselling. Profit sharing from reselling activities can align incentives and enable a win-win situation for both clients and providers.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

G3.3

Pay per spare part performance

Service level of this business model

1

2

3

Performance-based contracts align incentives for effective and efficient repair between the logistics provider and clients. Performance-based payments may be linked to the number of spare parts covered, the availability of parts, or the prevented economic loss from downtime.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

H1.1

Used goods bargain

Service level of this business model

1

2

3

Recovery managers take the role of retailers, but with collected used goods. Traditional sales models are applied, namely consumers can buy and take ownership of used goods.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

H2.1

Fair-trade recycles

Service level of this business model

1

2

3

The coordinator engages in trade-based market transactions: materials are bought from waste pickers, processed through value-added activities (e.g. sorting), and then sold in the recycle market.

PLEASE TURN OVER →

Further information

Shared incentives between the logistics provider and clients drive repair. Professional management by specialists leveraging economies of scale makes some transactions viable in the first place and enlarges the market for repair. However, incentives may be driven more strongly by economic than environmental performance so the KPIs on which the contracts are based need to be carefully designed to maximise circularity.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)

Further information

In theory, profit sharing from remarketing activities can help to simultaneously maximise environmental potential from reuse activities. However, the economic value gained from the reutilisation of products or materials is not always aligned with the best possible environmental value (e.g. effort required for refurbishing might be excessive, leading to recycling instead).

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)

Further information

Depending on the amount of own value-added activities, the coordinator can significantly contribute to recycle quality. For example, the internal operation of sorting processes, preparation for recycling (e.g. washing), and recycling itself can contribute to generating high-quality recycles.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)
Supplier (mechanical engineering) (role B)
Producer (role C)

Further information

Through collection or take-back, recovery managers become the temporary owners of the used goods. This allows them to add selected value-added activities such as refurbishment, repair, upcycling, or repurposing depending on a product's condition.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

11.1

Recycling platform

Service level of this business model

1

2

3

Offers to supply residual or waste material (e.g. plastics), for example from mechanical engineering or other manufacturing, can be made on the platform to meet demand for secondary materials. Materials are characterised (amount, quality, material properties) to facilitate search. The platform provider (i.e. intermediary) charges transaction fees. Ownership transfers from the seller to the buyer.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

12.1

Used goods platform

Service level of this business model

1

2

3

Reuse intermediaries provide platforms to match supply and demand for used goods in business-to-business, business-to-consumer, and consumer-to-consumer contexts. The role of inter mediation may be taken by 3rd-party actors, or by core actors in the value chain (e.g. retail).

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

12.2

Sharing platform

Service level of this business model

1

2

3

Intermediaries focus on organising sharing transactions between owners of goods/infrastructure and potential users, thereby enabling access to products/infrastructure. The intermediaries operate digital platforms offering search, negotiation, rental contract design, financial transaction, and related offerings (e.g. insurance) – but they do not own or operate a pool of products.

PLEASE TURN OVER →

Pattern > Case example >

SUB-PATTERN



Business model
sub-pattern

A1

Circular raw materials supplier

Service level of this business model

1

2

3

Suppliers vertically integrate – via strategic partnerships or own investments – into recovery and/or processing of secondary raw materials. Using both primary and secondary materials, suppliers can flexibly respond to customer demand under fluctuating availability regarding quality and quantity of secondary inputs. Diversified suppliers who have hitherto focused on primary raw materials and entrepreneurial firms with a circular mission are covered.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

A1

Further information

By minimising transaction costs, platforms help to increase the market for reused goods. Given the nature of the platform business model, the focus is restricted to intermediating classical sales transactions between sellers and buyers (with ownership of the goods being transferred), with no additional circular potential for the intermediary.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)
Recovery providers (role H)

Further information

Platforms lower transaction costs (search, negotiation, payment) for trading materials and can therefore increase the market for recycling materials. Better information and characterisation enables higher quality recycling streams and, subsequently, applications with higher performance needs.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)
Supplier (mechanical engineering) (role B)
Producer (role C)
Retailer & service points (role D)
Recovery providers (role H)

Further information

By minimising transaction costs, platforms help to increase the market for reused goods. Given the nature of the platform business model, the focus is restricted to intermediating classical sales transactions between sellers and buyers (with ownership of the goods being transferred), with no additional circular potential for the intermediary.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)
Recovery providers (role H)

Further information

Platforms lower transaction costs (search, negotiation, payment) for trading materials and can therefore increase the market for recycling materials. Better information and characterisation enables higher quality recycling streams and, subsequently, applications with higher performance needs.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Supplier (molecules/materials) (role A)
Supplier (mechanical engineering) (role B)
Producer (role C)
Retailer & service points (role D)
Recovery providers (role H)

Circular strategy: Recycling



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see A1.1 and A1.2.
(The number of filled arrows indicates the service level.)



A1.1 Molecule & material recycling



A1.2 Materials bank



Producer (role C)
Retailer & service points (role D)
Prosumer (role F)

Further information

Shared products are used more intensively (less idle time). In principle, this enables the procurement of higher quality products, because investment pays off sooner. However, given that intermediaries are not fleet managers - i.e. no central pool of products is managed - this model cannot leverage additional circular potential such as centralised maintenance, repair, upgrading, and preparation for recycling.

Possible partnerships

The following partnerships should be established in order to convert your value chain into a cycle. The business models of all partners should be coordinated with one another.

Producer (role C)
Retailer & service points (role D)
Prosumer (role F)

PATTERN > Case example > Sub-pattern



Circular business
model pattern

A2

Process molecule service provider

Process molecules or materials, usually with additional equipment (e.g. containers for solvents), are provided as service to direct customers, thus boosting the performance and quality of the application. Materials are maintained at the customer's site and returned when necessary. Instead of increased sales volumes, this business model aims to maintain a given amount of materials for as long as possible and is now well established as chemical leasing.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

B1

Machine/component 'as new'

Machines/components are taken back from customers, quality is checked, the machines/components are fully disassembled, worn parts/materials are replaced, after which the machines/components are fully reassembled. Remanufactured machines have identical or superior quality at lower cost.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

B2

Machine/component remarketing

Used machines/components are taken back, quality-checked, reconditioned or repaired where necessary, and reintroduced onto the same or other markets to new customers with lower performance expectations at competitive prices, thus extending machine/component lifetime with additional use cycles.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

B2

Machine/component remarketing

Used machines/components are taken back, quality-checked, reconditioned or repaired where necessary, and reintroduced onto the same or other markets to new customers with lower performance expectations at competitive prices, thus extending machine/component lifetime with additional use cycles.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

C1

Proprietary material cycles

Producers introduce a product design with specific premium materials, resulting in higher customer value (e.g. durability, health, visual appearance) but at acceptable costs. Higher virgin material costs are offset (or overcompensated) by measures to keep their own premium materials in closed loops and make continuous reuse of them for their own production.

PLEASE TURN OVER →



Circular strategy: Remanufacturing

Each business model pattern can develop along the service levels. With each service level, circularity increases – away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see B1.1, B1.2 and B1.3.

(The number of filled arrows indicates the service level.)

  B1.1 Machines/components 'as new'

  B1.2 Rental machines/components 'as new'

  B1.3 Pay per reman machine performance



Circular strategy: Maintenance

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see A2.2 and A2.3.

(The number of filled arrows indicates the service level.)

  A2.2 Molecule & material leasing

  A2.3 Molecule & material performance



Circular strategy: Recycling

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

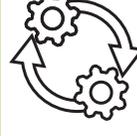
Two sub-patterns are presented for this pattern, see C1.1 and C1.2.

(The number of filled arrows indicates the service level.)

  C1.1 Waste cherry picking

  C1.2 Materials bank partnership





Circular strategy: Reuse

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see B2.1, B2.2 and B2.3.

(The number of filled arrows indicates the service level.)

  B2.1 Used machines/component sales

  B2.2 Rental machines/components

  B2.3 Pay per reman machine performance

PATTERN > Case example > Sub-pattern



Circular business
model pattern

C2

Product 'as new'

Companies offer products with 'quality as new' (i.e. of equal or better quality than 'virgin' products), but at more competitive prices. Customers receive financial incentives for returning products (e.g. deposit; discounts). Returned products are then quality-checked and fully disassembled and worn parts/materials are replaced, after which the products are reassembled. Reman activities are usually centralised and are similar/remain close to primary production.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

C3

Used product remarketing

Producers (or retail partners) take used products back from customers, carry out quality control and optional minor refurbishment, and remarket used goods in the same or other markets at lower prices. Warranties are provided, but usually not with the same terms as new products.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

C4

Out-of-warranty repair service

Producers of premium quality goods incentivise extended use by customers by offering accessible, affordable, and competitive out-of-warranty repair services ('repair pays'), as a centralised, decentralised, or home delivery service. Products are supported in the long term through related availability of consumables, spare parts, necessary software upgrades, and, optionally, technological upgrading.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

C5

Upgrades, spares & accessories

Producers provide spare parts, tools, and related services for their core products, either through own online or offline sales channels, or by partnering with retailers and local service shops. This requires core products to follow a modular design which makes them easily repairable either directly by consumers ('do-it-yourself') or by decentralised service points without any need for special training.

PLEASE TURN OVER →



Circular strategy: Reuse

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see C3.1.

(The number of filled arrows indicates the service level.)

  C3.1 Used product sale







Circular strategy: Remanufacturing

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see C2.1, C2.2 and C2.3.

(The number of filled arrows indicates the service level.)

  C2.1 Selling Products 'as new'

  C2.2 Product leasing 'as new'

 C2.3 Total care producer



Circular strategy: Repair, Upgrade

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see C5.1 and C5.2.

(The number of filled arrows indicates the service level.)

  C5.1 Modules & accessories shop

  C5.2 Upgrade subscription





Circular strategy: Repair

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see C4.1, C4.2 and C4.3.

(The number of filled arrows indicates the service level.)

  C4.1 On-demand repair

  C4.2 Leasing producer

 C4.3 Total care producer



Circular strategy: Recycling

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see D1.1 and D1.2.

(The number of filled arrows indicates the service level.)

D1.1 Retailer as cycle manager

D1.2 Materials bank partnership



Circular strategy: Maintenance

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see C6.1, C6.2 and C6.3.

(The number of filled arrows indicates the service level.)

C6.1 Fee-based maintenance

C6.2 Leasing producer

C6.3 Total care producer



Circular strategy: Repair, Maintenance

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Three sub-patterns are presented for this pattern, see D3.1, D3.2 and D3.3.

(The number of filled arrows indicates the service level.)

D3.1 Integrated service point

D3.2 Rental retail

D3.3 Total care retail



Circular strategy: Reuse

Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see D2.1 and D2.2.

(The number of filled arrows indicates the service level.)

D2.1 Used goods on sale

D2.2 Rent-a-wreck fleet manager

PATTERN > Case example > Sub-pattern



Circular business
model pattern

E1

Repair gap exploiter

3rd-party service provider for repair and maintenance (possibly refurbishment) operating either in cooperation with producers and retailers (i.e. service partnerships), or – if no or no attractive offers are available from focal actors – working autonomously as ‘gap exploiters’. Services may be offered online with national or even international reach, in local service points, or as a delivery service.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

F1

Prosumer support system

An alternative non-market circular model based on self-sufficient lifestyles, self-help, and the ‘right to repair’. It is supported by several non-commercial initiatives (e.g. repair cafés) and commercial support business models (e.g. C5 Upgrades, spares & accessories). New technologies such as 3D printed spare parts additionally enable self-help by users. Producers lose control over products, except when providing commercial support services themselves (e.g. spare parts).

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

G1

Material reverse logistics

Reverse logistics providers specialise in recycling logistics. They collect materials (as incorporated in products) from customers or retail, conduct value-added activities (e.g. pre-sorting, cleaning, recycling), and deliver the secondary materials to either the original source of the materials (e.g. producers, materials banks) or resell them in (electronic) markets, sometimes via intermediaries and related platforms. Depending on the value-added activities, logistics providers may themselves act as recovery managers.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

G2

Refurb logistics services

Logistics providers plan and operate product returns for producers or retailers. They link returned products from customers or points of sale and value-added services such as refurbishment with remarketing channels by producers, retailers, and/or recovery managers. On the basis of an initial quality check of returned goods, logistics providers make decisions about the best possible circular strategy: direct reuse, some degree of refurbishment (e.g. repair, polishing, repackaging), or, if technical or economic reasons prevent reuse, material recycling.

PLEASE TURN OVER →

Circular strategy: Repair, Maintenance



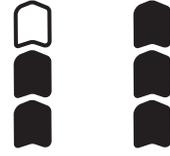
Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see F1.1 and F1.2.

(The number of filled arrows indicates the service level.)



F1.1 Do-it-yourself repair



F1.2 Peer-to-peer sharing

Circular strategy: Repair



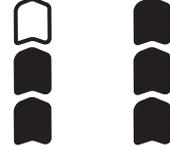
Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see E1.1 and E1.2.

(The number of filled arrows indicates the service level.)

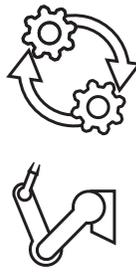


E1.1 Repair transaction



E1.2 Repair-based rental

Circular strategy: Remanufacturing, Reuse



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see G2.3.

(The number of filled arrows indicates the service level.)



G2.3 Pay per refurb performance

Circular strategy: Recycling



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see G1.3.

(The number of filled arrows indicates the service level.)



G1.3 Pay per recycling logistics performance

PATTERN > Case example > Sub-pattern



Circular business
model pattern

G3

Spare parts management

Based on clients' outsourcing, service providers manage spare parts-related activities (this may include modules for upgrading) including delivery, exchange/repair, returns management, reuse or refurbishment of used parts, and recycling of waste components/materials. Spare parts logistics either supports the clients' own infrastructure/assets (i.e. to maximise uptime) or after-sales services for their products in the market (e.g. car repair). Specialised logistics providers leverage economies of scale across clients.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

H1

Revitalised products

Actors from the recovery/waste management sector refurbish publicly collected products/materials, carry out quality control, and put used goods/ recyclates back on the market on either a non-profit or for-profit basis.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

H2

Coordinator of informal collection

The coordinator serves as a hub for informal waste pickers and organisations with demand for recyclates. Waste pickers collect materials from littering or households and sell it to the coordinator. The coordinator may sell pooled materials directly or engage in various value-added activities as a secondary raw materials producer and then sell recyclates on the market.

PLEASE TURN OVER →

PATTERN > Case example > Sub-pattern



Circular business
model pattern

I1

Recycling platform

Business-to-business platform business model which provides electronic marketplaces to match supply and demand for residual, used, or wasted materials.

PLEASE TURN OVER →

Circular strategy: Reuse



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see H1.1.

(The number of filled arrows indicates the service level.)



H1.1 Used goods bargain



Circular strategy: Repair



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see G3.3.

(The number of filled arrows indicates the service level.)



G3.3 Pay per spare part performance

Circular strategy: Recycling



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see I1.1.

(The number of filled arrows indicates the service level.)



I1.1 Recycling platform



Circular strategy: Recycling



Each business model pattern can develop along the service levels. With each service level, circularity increases - away from a product focus (level 1) towards results-oriented services (level 3).

One sub-pattern is presented for this pattern, see H2.1.

(The number of filled arrows indicates the service level.)



H2.1 Fair-trade recycles





Used goods & sharing platform

Platform business models provide an electronic marketplace to match supply and demand for used products or components. The electronic platform minimises transaction costs for sellers and buyers (e.g. search, communication, and negotiation costs).

PLEASE TURN OVER →

Circular strategy: Reuse



Each business model pattern can develop along the service levels. With each service level, circularity increases – away from a product focus (level 1) towards results-oriented services (level 3).

Two sub-patterns are presented for this pattern, see 12.1 and 12.2.

(The number of filled arrows indicates the service level.)

 12.1 Used goods platform

 12.2 Sharing platform

