

LOOPHOLES

the handbook



The development of this toolkit is part of the activities of the Transitions Erasmus+ project. To know more about the project, access our website.

<https://transitionsproject.eu/project/>

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TRANSITIONS LOOPHOLES TOOLKIT

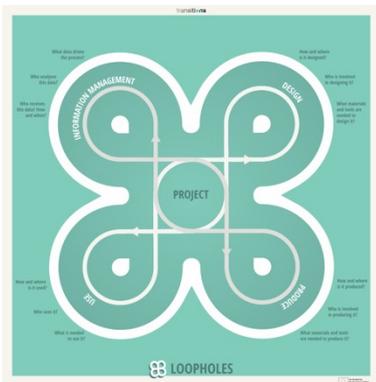
The Loopholes toolkit is centered on a design game that supports participants to create complete customer journeys and data flows that open the gateway to future production systems, taking sustainability and the impact of different technologies into account. The game was designed to enable participants to reflect on the (current) processes of their companies and scale them into product-service Ecosystems and Ecologies. In showing that current challenges can be solved through different strategies, each game can create a different localized solution for how their companies can transition towards circularity through digitalisation.

TOOLKIT CONTENTS

The Loopholes toolkit consists of the Loopholes design game and a business canvas. Post-its, pens and markers are also needed to play and use the toolkit.

Loopholes design game

The Loopholes design game is composed by a game board, a deck of strategy cards, and extended content website.



Game board

The board has four quadrants: Design, Produce, Use, Information Management. Within each quadrant, there are questions to be answered during the 2 rounds of the game through post-it notes.



Strategy cards

The strategy cards include technologies, methods and ideas that aim to prompt transformations in your system. These are split in four categories: Digitalisation, Sustainability, Stakeholder Engagement, and Business & Finance.



Extended content (under construction)

Presented in the form of a website, the extended content is a database that further details each of the strategies in the Loopholes deck and offers insights on how they might be applied through relevant case studies.

<http://circularloopholes.net/>

Business canvas

To support entrepreneurs in building their business plans through a systemic thinking approach, a business model canvas was adapted as a complimentary tool to the Loopholes toolkit.



Business canvas

The Loopholes business canvas leverages on the mapping process of playing the game. It aims to not only identify and organize the building blocks of a business plan, but to also highlight the relationships between them. In turn, this facilitates nurturing ongoing processes of rethinking the business, which can lead towards a more resilient, human centered and environmentally sustainable economy.

The Loopholes business canvas leverages on the mapping process of playing the game. It aims to not only identify and organize the building blocks of a business plan, but to also highlight the relationships between them. In turn, this facilitates nurturing ongoing processes of rethinking the business, which can lead towards a more resilient, human centered and environmentally sustainable economy.

HOW TO PLAY

Loopholes is played in two rounds, plus a wrap up phase. The aim of the first round is to describe your project through your current processes and data flows. In the second round, strategy cards will be used to transform your project and the relationships that constitute it. You will need post-its of 3 colors to differentiate between the stages of the game.

Note: Interaction with tangible artifacts unlock different ways of thinking, so keep your material samples and prototypes around you to support you in this process.

Round 1

Take your first block of post-its. In one post-it, write the name or shortly describe the project (product, service or system) that will be analyzed and (re)imagined during the game. Place it at the middle of the board on top of "project". Then, situate yourself in the cycle by choosing the most relevant quadrant to your professional experience. Starting from this place, answer the questions by filling in post-it notes for each question, and continue to follow the cycle until you complete describing the processes related to the four quadrants. Feel free to go back to previous quadrants and fill-in more details to describe your project clearly. In this, avoid writing too much in each post-it. Keeping answers succinct will help you in making changes to your system during round 2.

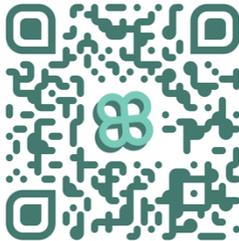
To end this round, search through the deck of strategy cards. If you identify strategies that are already present in your Loopholes system, place them on your board wherever applicable together with a post-it that explains how they apply to your system.

Take a photo of your game to record the outcome of round 1.

Round 2

Take a new color block of post-its. Then, choose up to 3 strategy cards from the deck and place them next to the board. One at a time, use them to reimagine your system by adding new post-its when making changes to your ecosystem. The different colors will keep the changes visible.

Would you like to know more about a specific strategy card? You can look each card up in the Loopholes Extended Content website:



Take a photo of your game to record the outcome of round 2.

Wrap up

To wrap up the Loopholes game, have a final look at your Loopholes system and check if your new solution makes sense. Adjust if needed and prepare to pitch it.

Setup for building business model

If you aim to use Loopholes to create a business plan, you can extend the wrap up phase to setup the transition from the game towards building a business model.

see "After the game: From Loopholes to Business Models" for follow up instructions

In this case, consider the solution you proposed as your (eco)system during the game and, in a post-it of a different color than used before, briefly answer the following questions:

- What are the consequences for energy consumption? (sustainability)
- And what are the consequences for people's lives? (human centeredness)
- How do your choices make the business economically more sustainable? (resilience)

RULES OF ENGAGEMENT: "BLUE SKIES"

By playing Loopholes, we are looking for opportunities for transformation through system thinking. Therefore, brainstorming rules apply, particularly:

- deter judgement
- *encourage wild ideas*

- *build on the ideas of others*
- *be visual*

How does one change ripples on the rest of the system?

Building on ideas and following process and data flows are key. Through playing Loopholes, players should become attuned with relational and systemic thinking by exploring how changes in their system can ripple into different aspects. To do this, it is important to tune into the notion of wicked problems [10], meaning that complex problems do not have a simple, definitive, and objective solution. From this understanding, rather than solving the problem of sustainability and lack of digitalization in companies, what is possible is to propose a process of negotiations and renegotiations between elements of a system to seek for a more sustainable and more circular solution. This process of negotiations should remain in flux, open for a new cycle of revisions that can adapt to rapid socio-techno-economic and environmental transformations. ***The end of a game is not a final solution, it is a step in an ongoing process of transformation.***

AFTER THE GAME: FROM LOOPHOLES TO BUSINESS MODELS

Based on the ecosystem you created through the Loopholes game, it is possible to create a business model. For that, use the business model canvas provided in the toolkit and fill-in each section by answering their questions.

Identifying relationships

A circular business model differs from a traditional one because all elements are totally entangled. This means that front and back office (the right and left sides of the traditional canvas) become one. Users, for example, can be both active stakeholders in the process of creating the value proposition and 'end' users whose needs such proposition aims to satisfy.

After you finish completing all sections of the business canvas, annotate your model and use arrows to link and describe the different roles and relationships between stakeholders and the different elements of the model.

STRATEGY CARDS & EXTENDED CONTENT

If you would like to know more about any of the strategies proposed, scan the QR code below each of the cards. All of them can be found through the link: <https://circularloopholes.net/>

Personalisation

Digital workflows and manufacturing tools support users to participate of the design process of personalised products by providing their data as design input.

How would designing from users personal data change how you operate?

DIGITALISATION



Virtual Sampling

Virtual samples can be easily changed and shared with stakeholders, reducing production costs and time needed to create multiple physical prototypes as well as opening opportunities for experimentation.

How could this flexibility change the way you work?

DIGITALISATION



Tecnographic Web-Tracking

The information collected about how the users and other stakeholders interact with the company online. The data related to the time, place and frequency of interactions can infer many things about the stakeholders.

How and when could this data enter and change your workflow?

DIGITALISATION



Digital Product Passports

Detailed information about a product is stored in a database, supporting traceability of its origin. This database can possibly keep on being updated throughout its lifespan.

How could such data support transforming your businesses model into a circular one?

DIGITALISATION



AR try-on

Augmented Reality (AR) for clothing can bridge the gap between digital and physical retail by using a camera to create a realistic virtual representation of a product over the customer's body in real-time.

What transformations would be needed in your system to implement AR try-on technology? Would you need a partner to implement this technology?

DIGITALISATION



Advanced sorting technologies

Technologies such as artificial intelligence and computer vision can be used to identify and sort materials for recycling and upcycling. Wearers could be contacted to determine the optimal moment for recycling.

How could introducing such technologies contribute to increasing the sustainability of your system?

DIGITALISATION



Wear and Tear

Wear and tear on a physical product can be seen as data on its use, consumption and wearer's habits. For example, an iPhone now has a 3D scanner built in that can scan shoes and compare to the original scan.

How could this data be collected, analysed and used to inform your processes?

DIGITALISATION



Digital Twin

Digital twins are virtual representations of products or systems that get updated (often in real-time) throughout their life-cycle.

How could this technology change your products or maintenance procedures of your manufacturing facilities? How would you design differently?

DIGITALISATION



Blockchain and Web3 Technologies

Web3 technologies like Blockchain are used to track the production, delivery and use processes via a connecting technology, like NFC or QR. This leads to ecosystem data, less counterfeiting, assurance of ownership and provenance, and easy management of warranties and discounts.

How could such technologies be implemented in your Loopholes ecosystem?

DIGITALISATION



Digital Worlds

Embracing digital fashion can lead to innovative things like virtual fashion in the metaverse or gaming that, in turn, could lead to things such as NFT, community building, new creativity and commerce.

What kind of new input could you give and receive by joining digital worlds in games and the metaverse? What new job titles would you need to get into digital worlds mindset?

DIGITALISATION



Open Source Co-Production

Companies can make their processes open for users and other businesses to engage as stakeholders.

Which processes could be changed by enabling users to participate of your ecosystem? What tools could you use to enable this participation?

STAKEHOLDER ENGAGEMENT



Co-Design

All stakeholders can be included into the design, production and use processes as experts of their own experiences, allowing for the reduction of misconceptions and identification of challenges & opportunities for new development directions.

How could all stakeholders become more involved in your processes and circular system?

STAKEHOLDER ENGAGEMENT



Local Community

Employing or involving local communities in processes like designing and manufacturing often leads to positive benefits for the company and society.

Do you know your local communities? Are there processes in your project that, if done by the local community stakeholders, could bring value to your product/system as well as the local community?

STAKEHOLDER ENGAGEMENT



Strategic partnerships & Stakeholder Networks

Strategic partners are parties that impact your value proposition. The dependency between parties might be mutual and the level dependency can be balanced or not, high or low.

After changing your Loopholes system, who are your strategic partners, and how does the (mutual) dependency situation look like with each of these?

STAKEHOLDER ENGAGEMENT



Fair labor practices

Industry 5.0 seeks a transition towards sustainable, human-centric and resilient industries. In this, workers should be paid fair wages, have safe working conditions, and not be subjected to exploitation or abuse.

What does fair labour look like within your Loopholes system? Are there points of obscurity on labour practices in your project, be it within your company or among your partners?

STAKEHOLDER ENGAGEMENT



User Feedback loops

Collecting and making sense of user feedback is critical for businesses that wish to make improvements based on what their users need.

How could digital technologies support you in building or strengthening a feedback loop between users and the products and services you provide? Which incentives and methods can you use for users to be willing to share information with your company?

STAKEHOLDER ENGAGEMENT



Refreshing Roles

Attracting and retaining new talent requires redefining stakeholder roles to offer them comprehensive employee value proposition (EVP) and the best opportunities for development within your company.

How can you reimagine traditional tasks by defining new roles that are more attractive to younger talents?

STAKEHOLDER ENGAGEMENT



User as Stakeholder

Make the user an active stakeholder since the beginning of the process, rather than thought of as a "consumer". This leads to more meaningful products/services and less "Engagement" in later phases.

What technologies could open the production process to users as stakeholders? How could they give them a role in all of the phases of your circular system?

STAKEHOLDER ENGAGEMENT



Shared Governance

Sharing ownership with all the stakeholders can ensure that all are invested in the ongoing sustainability and success goals of the project. Encouraging all stakeholders to become owners ensures deep engagement.

How can you engage all the stakeholder so that they are invested in the success of the company?

STAKEHOLDER ENGAGEMENT



Fluid Fashion Consumption

Wearers are changing attitude towards identity. This is reflected in clothing choices that blur the lines between traditionally gendered fashion categories. This shift has implications for product design, marketing, in-store and digital shopping experiences.

How could addressing this shift impact your Loopholes circular system?

STAKEHOLDER ENGAGEMENT



From Sustainable to Circular Materials

A material is considered sustainable depending on many factors, including recyclability or from where and how they are sourced. A material is considered circular when it can be reused multiple times in supply chain ecosystems and is understood in a Life Cycles Analysis.

How could your sourcing strategies be changed to increase the level of circularity of the materials you use?

SUSTAINABILITY



Design for Disassembly

Repair, recycle and reuse are some of the principles to increase sustainability (6Rs). Design for disassembly increases the reparability of products as well as improves the chances of it being properly recycled or upcycled.

What could be changed in your project to enable disassembly? What techniques can be used to make it easier to disassemble your product and salvage its materials?

SUSTAINABILITY



Designed for Multiple Uses

Products can be designed with varying levels of open-endedness or to fulfill multiple uses, enabling users to engage with them in different ways. These are often discovered by the user in everyday use.

Could you think of multiple ways to use/wear your product or how its purpose could change over time, extending its life cycle? Can you devise a mechanism for wearers to share their everyday solutions?

SUSTAINABILITY



More than Human Design

Non-humans can become stakeholders in the design and fabrication process. Often things like water, critters and living materials can be seen as collaborators, creating positive symbiotic relationships.

What would change in your ecosystem by introducing this concept into your circular Loopholes project?

SUSTAINABILITY



Collaborative Consumption

In collaborative consumption, users minimize the negative impact on the environment by sharing and exchanging clothing items. This extends the life of the garments and reduces the need for new clothing production.

What kind of services could you provide to promote this kind of consumption?

SUSTAINABILITY



Enabling Repairability

Having access to the specific tools, knowledge and skills needed to maintain a product in good condition can encourage users to keep their products for longer while also nurturing a relationship with your business' ecosystem.

What possible ways could your users access such resources?

SUSTAINABILITY



Extending Life-cycles

Extending the life-cycle of products can be achieved through paying attention to durability of materials used as well as designing products with reuse, repair and remanufacturing in mind.

Which of these strategies could be implemented to slow down the loop in your project?

SUSTAINABILITY



Post-use Materials

Collecting products post-use can enable recyclability and reutilisation of materials.

How can you incentivize your user to return the garment? How would they know how and when to return the garment?

SUSTAINABILITY



Joining Closed-loop Recycling

Extended Producer Responsibility (EPR) schemes and requirements are becoming increasingly important. Producers are responsible for waste during production as well as for the waste that their products create. To close the loop, companies may devise manufacturing processes that leverage the recycling and reuse of post-consumer products to supply the material to create a new version of the product, with the objective of promoting zero material waste.

How would collection and reuse of post-use materials impact your processes?

SUSTAINABILITY



Waste Reduction

Waste reduction can, and should, be dealt with in different stages of a product life cycle: using design strategies to prolong product life, optimising material use during production, managing stock, retrieving materials for reuse.

Which technologies could you implement in your Loopholes to reduce waste in the different stages of your product's life cycle?

SUSTAINABILITY



Building Product-Service Ecosystems

An ecosystem is composed by a range of products and services that support each other. These can be all from the same brand, fostering loyalty with the brand through an ecosystem lock-in.

Brands often do this as well with Sizing, Style, and Brand Colorway Consistency. Ecosystems can also be open for other products and services through interoperability.

Can you create or increase the reasons for stakeholders to commit to your brand in the loopholes system? What could an ecosystem built around your product or service look like?

BUSINESS & FINANCE



Revenue Models

The most common revenue model is money-over-the-counter. That is also a convenient way to organise exchange, as cash is coming in right after the purchase. There are, however, other possibilities like subscriptions, memberships, licences, rental or lease constructions.

What would happen to your Loopholes plan if you changed to another source of revenue for the business? How would that change stakeholders and what they do?

BUSINESS & FINANCE



Technology Resilience

The ability to make plans is dependent on the extent to which future conditions are predictable or not.

How can you prepare your system to adapt should the main technology/application you use to fulfill the value proposition become obsolete?

BUSINESS & FINANCE



Developing Competencies

Skills and competencies that are needed to create the value proposition might already be available in your ecosystem. Otherwise, they need to be developed.

Which competencies are you lacking? And how are you going to acquire these: training or outsourcing?

BUSINESS & FINANCE



(Re)Positioning

In order to price products and services one must be aware of its position within the competitive landscape.

How would the changes in your Loopholes system impact your position within the competitive landscape? Can you list different industry players that are the most similar in terms of benefit or price position (product/market combination)?

[apply this card last]

BUSINESS & FINANCE



On-demand Production

On demand production means products are only produced as they are purchased, avoiding deadstock while opening opportunities for personalised products to be created.

How would this model of production impact your current process and organization?

BUSINESS & FINANCE



Economic Resilience

The ability to make plans is dependent on the extent to which future conditions are predictable or not.

In the case that the assumptions on which your decisions are made do not hold, what do you need to change in your Loopholes plan to prepare for a plan B?

BUSINESS & FINANCE



Task Allocation

It is crucial to every business to have the right people and to keep them engaged in their jobs. To do that, however, one must first decide upon tasks to be fulfilled.

What are the main tasks to be fulfilled to create and communicate the value proposition, and who is responsible for what? In this, how can renewing role definitions better engage people working within your ecosystem?

BUSINESS & FINANCE



Means of Communication

Each public asks for different media uses as well as different messages to be conveyed.

Can you relate media usage and message to be communicated to each public that has some kind of relation to the business? How would these change in co-design stakeholder processes?

BUSINESS & FINANCE



P2P (Person to Person)

Online platforms can facilitate transactions between people, making it easy to share or sell clothing. These platforms can provide a wide range of services, offer flexible rental periods, and handle logistics such as cleaning and delivery.

How could establishing such platforms change your value proposition and your ecosystem?

BUSINESS & FINANCE

