



Entrepreneurs for plasticS'circUlaR Economy

IO1 – Training Course Material





Table of Contents

2.	Business idea and feasibility assessment, Enterprise self-assessment	3
2.1.	Towards a Capability Ecosystem; building Civil Economies beyond Industry 4.0.	3
2.1.1.	Context: Fondazione Edulife & 311 Verona	4
2.2.	Start-ups	7
2.2.1.	How to assess start-up ideas	8
2.2.2.	Help future entrepreneurs to self-assess their ideas	9
2.2.3.	A guideline for a more efficient assessment of enterprises' needs and priorities.....	10
2.2.4.	How to assess impact post-self-assessment	11
2.3.	Current entrepreneurs	11
2.3.1.	Assessment of businesses' shift toward a more "cradle to cradle" process and product 11	
2.4.	Revenue model.....	13

2. Business idea and feasibility assessment, Enterprise self-assessment

2.1. Towards a Capability Ecosystem; building Civil Economies beyond Industry 4.0.

For an enterprise to grow and distribute value, a shift of perspective is necessary. By looking at the global landscape surrounding us, we notice how enterprises, technologies and humans are gaining new roles and responsibilities- most of all, the mutual relationship among these subjects is shifting towards a new system of “integral ecology” (environmental, economic, social and cultural).

Integral Ecology is a concept introduced in Pope Francis’ encyclical letter *Laudato Si’* on environment. The definition of integral ecology stems from the fact that all things can be seen as connected, from an atomic and molecular level to all complex ecosystems. That is why environment has to be considered something humans take an active part in, and not as a mere background to our social, economic activities.

As an example, this means that environmental pollution in a specific area can be tackled only if we consider every aspect at play in the same context from a social, cultural and economic point of view. As a result, solutions to that particular pollution problems are effective only when they are comprehensive – that is, when they consider the interactions existing between nature, society, governance, economy and culture.

At the same time, all aforementioned aspects play an active part in the safeguard of the environmental balance: “[Pope Francis] also calls for a “social ecology” that recognizes that “the health of a society’s institutions has consequences for the environment and the quality of human life.” This includes the primary social group, the family, as well as wider local, national, and international communities.” (Thomas Reese, Integral Ecology: Everything is connected- National Catholic Reporter).¹

The concept of Integral Ecology can be linked to the definition of Civil Economics: “The civil economy paradigm proposes an alternative where it is acknowledged that i) part of the individuals depart from purely self-regarding preferences and develop other regarding and relational skills enabling them to overcome social dilemmas, ii) part of the productive system depart from the profit maximization paradigm and aim to satisfy the interests of a wider range of stakeholders beyond shareholders, and iii) value is, beyond GDP, the stock of cultural, environmental, spiritual and economic resources that a community can enjoy”. (Aiccon, publication nr. 162- Civil economics: definition and strategies for sustainable well-living)²

¹ <https://www.ncronline.org/blogs/faith-and-justice/integral-ecology-everything-connected>

² <https://www.aiccon.it/pubblicazione/162-civil-economics-definition-and-strategies-for-sustainable-well-living/>

In the following pages we will describe an example (although a partial one) on how the concepts of Integral Ecology and Civil Economy can be approached on a practical level. We will explore the case of 311 Verona, a research project developed by Fondazione Edulife Onlus in Verona (Italy).

2.1.1. Context: Fondazione Edulife & 311 Verona

What is 311: a bit of history

311 Verona is an innovation hub, a coworking and a learning accelerator set in the heart of Verona, a city in the North-East of Italy.

It was born in 2016 in the city's biggest and oldest industrial area.

Its setting is a previously abandoned, 1500 sqm large industrial establishment with a long history behind it. The building and its surroundings were founded in 1902 and belonged to Galtarossa foundry, an industrial giant that deeply influenced the city's economy throughout the 21st century.

It grew and survived both World Wars in spite of heavy bombings. After the second World War, the factory focused its production on the field of railway carriages until the late 1970s, before meeting economic difficulties and decreasing its activities.

The site was then completely abandoned until Fondazione Edulife started its recovery.

Today the environment still tells a story about the industrial vocation of Galtarossa foundry. A web of rails still surrounds the main building, and many old engines and objects are still exhibited in 311 Verona.

Developing the "311 Project" in such a context is no coincidence: this environment has been a symbol of development, history, dynamism and movement for more than one century.

311 Verona forwards these perspectives in a brand-new socioeconomic dimension.



An example of mutual relationship

311 Verona is many things. It is a project, a hub, a coworking, a learning accelerator, a physical observatory on the trends in the fields of technology, education and social innovation. 311 Verona is home to innovative start-ups, tech enterprises, students and professionals who meet on a daily basis establishing connections, activating experiments and growing with each other's support in the process.

As of today, it hosts a community of professionals, start-ups, multinationals, NGOs and young talents. Apart from enterprises and professionals, 311 Verona daily hosts about 100 students who take part in various training programs mainly (yet not exclusively) in the field of technologies and A.I.

311 Verona today embraces:

- around 100 workers (freelancers, entrepreneurs and employees spread in ca. 12 businesses)
- around 100 students taking part in a technical college (Istituto Tecnico Superiore) focusing on Digital Transformation and International studies.

Every inhabitant of this coworking is required to co-live and actively take part in a hybrid and intergenerational environment. In particular, here companies are expected to establish a deep level of communication with students and young people who inhabit 311 through educational activities and internships.



Students, startappers and tech companies meet in 311; on one side they share skills and ideas, on the other side their exchanges generate a positive impact in terms of job opportunities, new entrepreneurial projects and skill growth.

The goal is to work together to develop projects with a significant impact on the surrounding territory, with a particular focus on environmental and social issues.



311 is a living example of the mutual relationship among environment, economy, society and culture:

- 1) it gave new life to a previously abandoned location, and it is managed with a keen eye on environmental sustainability;
- 2) it hosts and empowers business entities thanks to its hybrid nature;
- 3) it designs cultural and educational opportunities addressed to young people and the whole community;
- 4) its activities mainly focus on the generation of social value and the measurement of its impact on the territory.

311 peculiar ecosystem was mapped in 2020 and its results are reported in the book “Capability Ecosystem”, as of today published in Italian (<https://www.ibs.it/capability-ecosystem-ecosistema-per-innovazione-libro-piergiuseppe-ellerani/e/9788869925337>).

Precious Plastic: 311 Verona and circular economy

Here we describe an example on one of the opportunities 311 Verona is developing in order to foster circularity and integral ecology.

Precious plastic is a project that was born in 2012 from Dave Hakkens, a student at the Design Academy in Eindhoven (Netherlands): today it has acquired a global stature.

Precious Plastic is a combination of people, machines, platforms and knowledge to create an alternative global recycling system and to come closer to a solution to the plastic waste problem.

The focus of the project is the design and development of machines to recycle plastic. Once any new

machine model is ready, Precious Plastic shares all information in order to allow anyone to replicate them for free.

Precious Plastic approaches count on people to bring about the necessary change: the movement encourages people all over the world to open their own recycling spaces where to collect used plastics (and other materials) and transform it into new objects thanks to Precious Plastic machines.

The machines can transform plastics and other materials into interior design objects (e. g. chairs, lamps and tables), construction materials, modular structures, jewellery and much more. Virtually anything can be made with Precious Plastic machines: all it takes is to design the right moulds.

The Precious Plastic movement is open source in the sense that it shares all the information, code, drawing and source material online for free. All content is licensed under Creative Commons Attribution - Sharealike International 4.0.

Nonetheless, the production of Precious Plastic solutions and knowledge is centralised at the Precious Plastic headquarter since hardware development is quite different from software, and Precious Plastic is still working on finding a way to fully involve everyone in the creation of knowledge.

In order to promote circular economy and sustainability 311 Verona will also become a recycle point and by the end of 2021 it will host Precious Plastic machines (specifically a shredder and an injection moulding machine). The aim is to involve the community, the students, the coworkers and enterprises who live in 311 in the collection and transformation of plastic waste.

Furthermore, Precious Plastic can become an example of circular economy for businesses and start-ups - inside and out 311 Verona.

2.2. Start-ups

Businesses and jobs in the circular economy field reflect the key elements to be followed as to pursue a right path. This concerns a broad spectrum of concepts constituting a work which starts from waste management and culminates in creative industrial development. The core of these activities includes the closing of raw material cycles as to enhance primary activities. Its implementation practices derive from and include innovative skills and creative mindsets applied as a consistent approach, which is necessary as it applies to all the phases of the cycle, from production and manufacturing, commercialization, to consumption³. Core strategies to be followed.

³ Ashaolu, T. A. INNOVATION AND INTELLECTUAL PROPERTY MANAGEMENT: TWIN DRIVERS OF EFFECTIVE TVET AND GLOBAL COMPETITIVENESS.



Figure 1: Circular Economy design primary components

Circular economy ensures that reduce, reuse, recycling harmless resources is occurring. When the resources are made usable again their lifetime is increased, and they are given a second life. Waste should be utilized as resources and these models should be considered as opportunities in aligning them with incentives. Future designs must go in the direction of those that enhance the lifetime of a product, and they must consider the concomitant application of digital methodologies and instruments as to include community participation as well⁴.

2.2.1. How to assess start-up ideas

As a part of the self-assessment procedure, the first step should be the assessment of the start-up idea as this step will be helpful in concentrating on the main topic of the business proposal. Several other important self-assessing steps are mentioned below:

- ✓ At first, write whatever crosses your mind: plotting an idea will boost your creativity, enhancing your idea generation potential along with it. This does not include directly approaching the business plan, instead, it focuses on finding the answers to your assumptions. This process includes the definition and delimitation of your customer segments, allowing you to define towards which market sector will your business be oriented and what changes it will bring after it resolves the identified issues.

⁴ Górecki, J. (2020). Simulation-Based Positioning of Circular Economy Manager's Skills in Construction Projects. *Symmetry*, 12(1), 50.

The questions you need to answer in this phase are at least the following: How will you make a difference? What are the key features of your business? What is the starting product you will place on the market?

- ✓ As second step of the process, you should decide about your positioning in relation to the world/market that surrounds you, at the start you might not have enough resources and budget, but that does not count for your long-term success.
- ✓ Following the first two steps, you can test your assumptions by experimenting. Dealing with casual customers and trying to interrogate business enterprises will be of a great use in clearing your doubts. Remember also to consult with experts that can guide you in evaluating your decisions.
- ✓ Start developing your own network. Having people who we trust in and can rely on around us is the best way to acquire confidence.
- ✓ Interview people about the knowledge that they have about your initiative and scopes and don't forget to communicate them your ideas if they are unaware of them⁵.
- ✓ Keep in mind all these steps and all the recent technologies advancements, along with the waste produced by our reference sectors. Our aim is to reduce this waste through circular paths.
- ✓ We need to redesign all that is laying in our environment/business. Models should foresee reduced pollution production rates and waste production reduction by converting them in a resource of the cycle.
- ✓ Your application of the circular framework could be to reuse and repair, saving old or damaged products from landfill disposal. Another way could be extending products lifetime, so they would stay in use for longer periods.
- ✓ Refurbishing should be adopted in a way that allows you to obtain new products through re-use. It would be an innovative framework in which employees would work on ideas where they can extract useful products out of waste.
- ✓ Recycling should be made essential in all the life-stages of the product. Starting from production, each stage should consider the 3 Rs to make it more sustainable.
- ✓ Product renting can also be a way to make an effective use out of this cycle, also enhancing customer relations with service providers, making products more sustainable and in use for longer time.

2.2.2. Help future entrepreneurs to self-assess their ideas

Self-assessment is considered as bringing a positive value because it helps in evaluate their goals, ideas, interests, by putting skills and experience into them. It is a tool used for boosting working

⁵ <https://www.productplan.com/blog/lean-market-validation-10-ways-rapidly-test-startup-idea/>

performances and it is known to be the most valuable tool for future entrepreneurs in starting new businesses. When you are capable of performing an honest and detailed self-assessment, you will find that your chances of upgrading your business towards better systems will grow. It will also make your path clearer as it will allow you to think about your experiences, knowledge, skills, financial goals, the capability of meeting challenges, willingness to expend your efforts and personal traits, which will help you identify the best business opportunities. It unveils your personal goals, and then it allows you to analyse them as to know their practical implication⁶. This would help to practice circular economic practices in better ways⁷.

2.2.3. A guideline for a more efficient assessment of enterprises' needs and priorities



Figure 2: Human Resources support and development activities circular diagram

Human resources have increased the efficiency of entrepreneurs in terms of training, insight, judgement, experience, relationship, effort and motivation, which also count in organizational performance in terms of profitability, quality, and customer satisfaction. Human resources allow for the development of employees with a wider perspective mindset. This mindset also includes equal and fair opportunities, flexibility, environmental protection, and cooperation among employees. In a circular system, there is the need to consider all these HR management elements because every incentive is surpassed in time and a collaborative effort would make this system work in all types of enterprises. It would bring a participated change, showing the difference. In the plastic circular

⁶ <https://www.inc.com/encyclopedia/self-assessment.html>

⁷ Meade, Jim. "Self-Assessment Tool Helps Target Training." HR Magazine. May 2000.

economy, if all the steps are delt under, it will bring a positive change, enhancing resource efficiency and saving many procedural step costs⁸.

In circular frameworks, it is essential to rethink what you are doing. You can hire an expert to help you in achieving this purpose, as to allow for a check of your sustainability. In this phase an evaluation is required, and you should check and choose among your available suitable alternatives. This assessment helps the entrepreneurs to consider their skills and performances, allowing them to improve and compensate to their flaws. You will be able to cope challenges in a better way after considering the self-assessment necessary in circular loop working⁹.

2.2.4. How to assess impact post-self-assessment

Slow timing in self-assessment activities is inherited as a trait of human nature, so there is a need for check-in-balance given that it would enhance our skills and would boost task efficiency. Students in their courses are directed to regulate learning processes which they will implement in their workplace. Post self-assessment helps in knowing what the output of the initial assessment was. It will be useful and effective in scaling out the flaws from the previous assessments, and the lack of efforts. In a circular economy, this would boost students towards taking action instead of a lazy approach. This system requires continuous effort to bring a change, so is expected from students to post-evaluate and enhance their learning outcomes. For this purpose, a rubric system can also be introduced in an organization, to ensure that employees are working in accordance to those set principles¹⁰.

2.3. Current entrepreneurs

2.3.1. Assessment of businesses' shift toward a more "cradle to cradle" process and product

At this moment there is an increase in the demand for circular economy, which has increased academic, political, and managerial interest. A value is being given to take-make-waste and move towards greener sustainable ways¹¹. **U-Eco project**¹², An U-Eco project focusses on current eco-friendly designs as to boost circular growth and provide wider opportunities in a monitoring framework for circular economy. European Union is financing and setting examples for small and Medium-sized enterprises in establishing circular economy through innovation, economic growth, and social integration. Circular framework demands support from every citizen as to contribute to the cause of

⁸ Piwowar-Sulej, K. (2021). Human resources development as an element of sustainable HRM—with the focus on production engineers. *Journal of Cleaner Production*, 278, 124008.

⁹ <https://www.referenceforbusiness.com/small/Qu-Sm/Self-Assessment.html>

¹⁰ Vasileiadou, D., & Karadimitriou, K. (2021). Examining the impact of self-assessment with the use of rubrics on primary school students' performance. *International Journal of Educational Research Open*, 2, 100031.

¹¹ Drabe, V., & Herstatt, C. (2016, July). Why and how companies implement circular economy concepts—The case of cradle to cradle innovations. In *R&D Management Conference from Science to Society—Innovation and Value Creation* (pp. 3-6).

¹² <https://swideas.se/ueco-en>



plastic pollution¹³. It is a concern for every company right now, as it has the potential of unlocking the possibility to add value to resources to increase economic growth. **Sobi.eco**¹⁴ is another example of developing the whole business in a circular economy model. **Ekomodo**¹⁵, Global sunrise project, is an open emerging opportunity for freshers, these current start-ups are working hard and earning a name through efficient operations¹⁶. In Italy, at the moment, 20 different practices in circular economy are being implemented by SMES¹⁷.

An example from Switzerland in their tackling of the cradle-to-grave process is that they have introduced regulations regarding the purpose of recycling products and making them usable for an entire lifetime. They promote innovative designs by defining the purpose of the products, determining their metabolism, defining areas of innovation, setting priorities, designing implementation, with influences of consumer behaviour, financial investments and proper business models¹⁸.

- ✓ The most promising start-ups observed today are: in Australia **Close the loop**¹⁹; in Finland **Sulapac**²⁰, then **le high technology**²¹, **Cellucomp**²², which are working hard on this subject of plastic circular economy.
- ✓ In our area, **Sintol**²³, **SIH**, **Stonebricks**, **Replant**²⁴, **Remete**²⁵, **Greenwolf**, and **Microwaste**²⁶ are currently I3P incubator programs working on plastic circular framework successfully.

¹³ <https://epale.ec.europa.eu/en/blog/circular-economy-promoting-entrepreneurship-and-self-employment-initial-findings-u-eco-project>

¹⁴ <https://sobi.eco/>

¹⁵ <https://www.ekomodo.eus/>

¹⁶ <https://www.bridgeforbillions.org/blog/the-circular-economy-is-every-entrepreneurs-business-and-heres-why/>

¹⁷ <https://www.sciencedirect.com/science/article/pii/S0959652619336911>

¹⁸ <https://researchoutreach.org/articles/cradle-cradle-principles-change-products-designed/>

¹⁹ <https://www.closesthe-loop.com.au/>

²⁰ <https://www.sulapac.com/>

²¹ <https://www.ie.edu/school-human-sciences-technology/>

²² <https://www.cellucomp.com/>

²³ <https://sintol.it/>

²⁴ <https://replant.it/wp/>

²⁵ <https://www.i3p.it/startup/remete-s-r-l>

²⁶ <https://www.tekneco.it/aziende-e-prodotti/aziende/microwaste-s-r-l>

2.4. Revenue model

A circular business model avoids value leakage

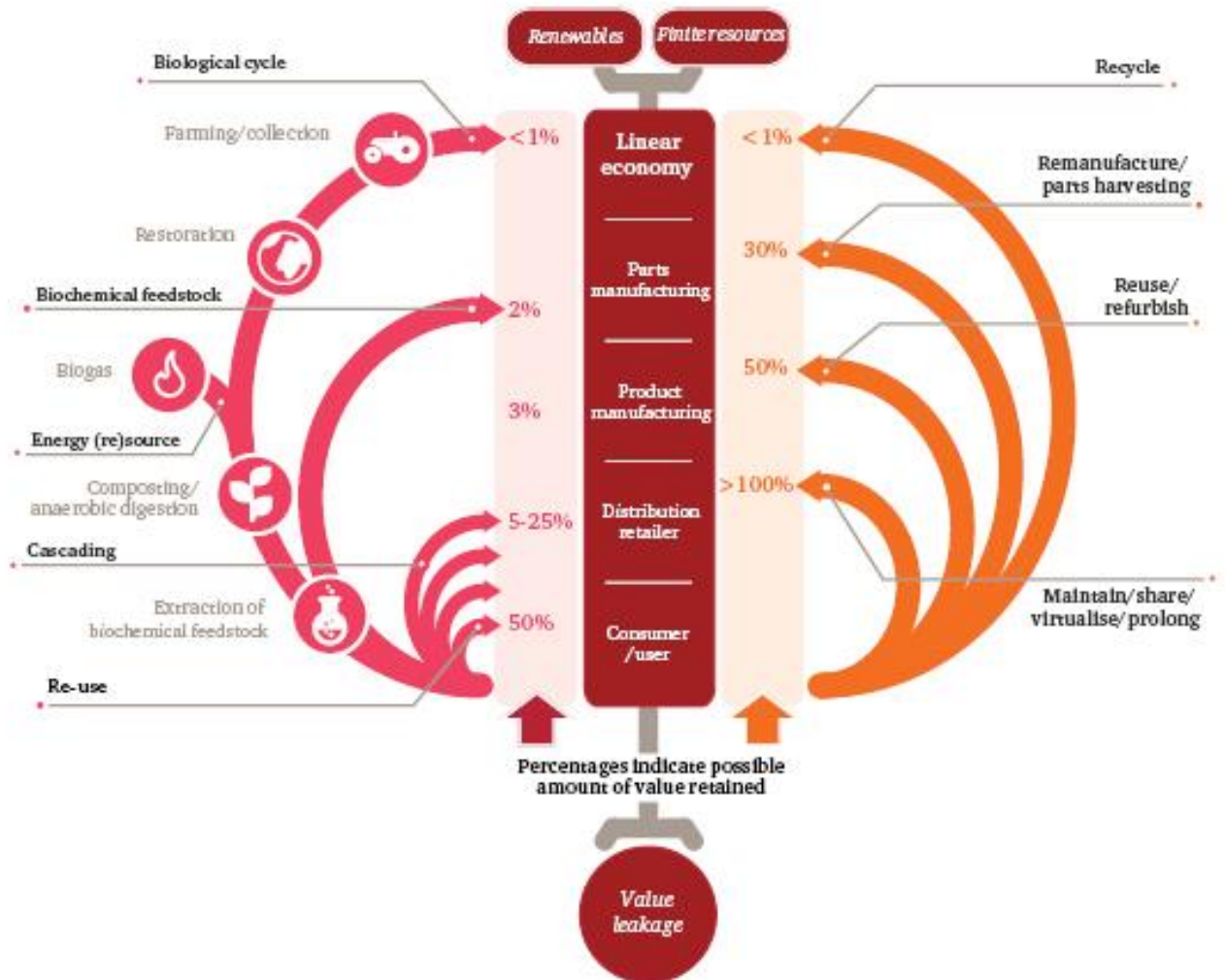


Figure 3: Circular Economy butterfly diagram

Scotland is working on zero waste business models, trying to offer new opportunities to people for enhancing creativity chances. After this first step, a contribution towards sustainability and businesses growth is delivered and evaluated. They can then generate new revenue, and with customers inclusion a transformation towards a new system is made possible. Protecting economy is required in this procedure because sustainability is a key in all areas. A budget or finance investment is foreseen in the initial stage, after which, when the product is being reused, resource costs are being saved. In particular, less or no new resources are extracted, which saves environment in return. These resources are used and reused again which is a user-friendly procedure. An energy investment is obviously needed, for which innovative ideas are required and entrepreneurs are encouraged to boost their skills and suggest long term sustainable ideas. You can opt for hiring or leasing in purchasing products and you have the availability of a performance-based service system. At the end an asset management

should be done, and the assets should be tracked to be reused in a system. Collaborative consumption is made possible, and a longer lifespan of the product is ensured²⁷.

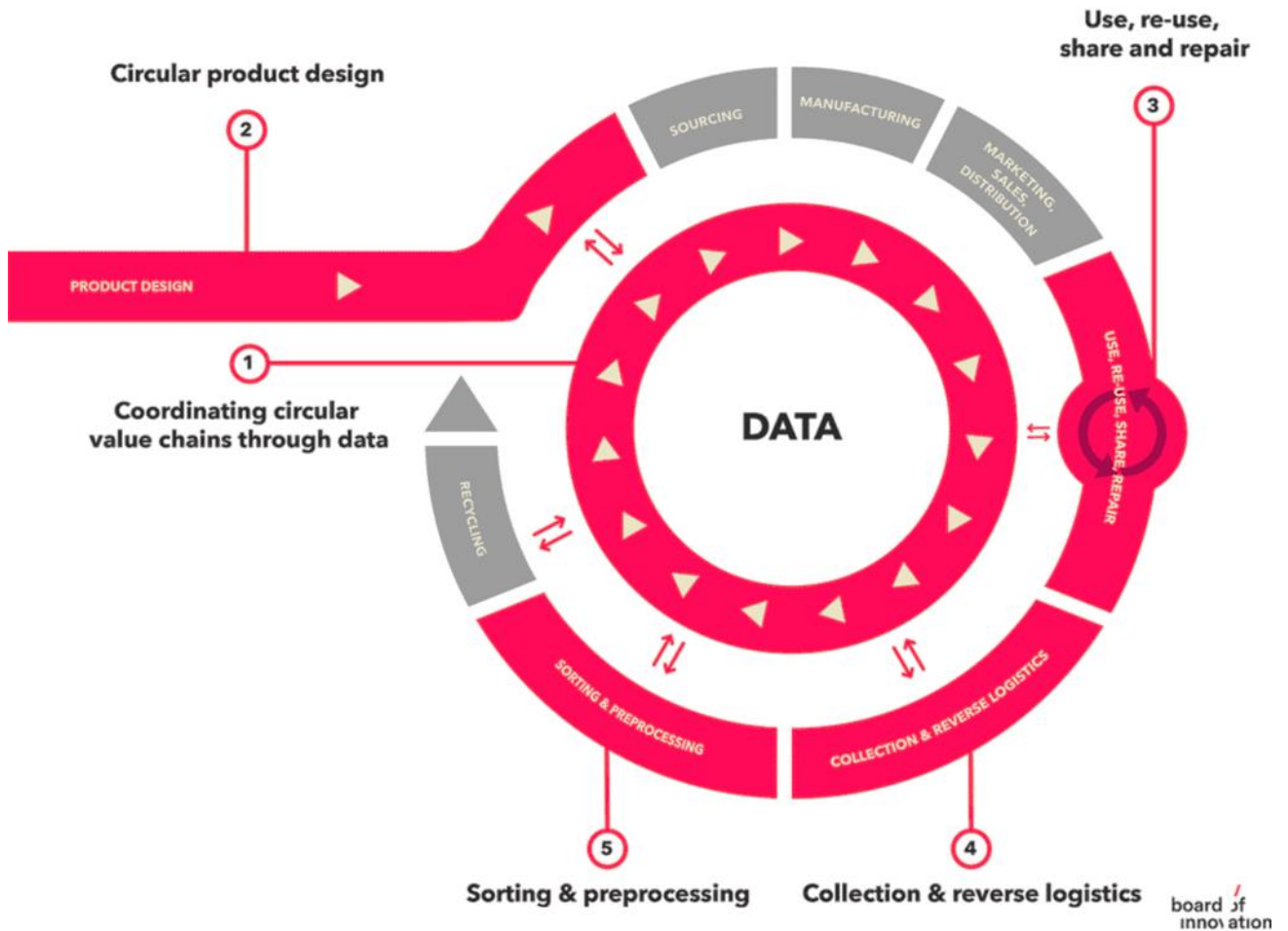


Figure 4: Circular Product design diagram

Circular business models serve to reduce the extraction and use of natural resources and the generation of industrial and consumer wastes. They represent the key activities required to transition to a more resource efficient and circular economy.

- ✓ Circular business models use already existing materials and products as inputs and therefore their environmental footprint tends to be considerably smaller than that for traditional business models.
- ✓ The environmental outcomes of circular business models also depend on their market penetration. However, the market share of these business models is currently limited. Recycling, remanufacturing and repair, the sharing of spare capacity, and the provision of services rather than products typically only account for up to 15% of production in any given sector.
- ✓ Some circular business models have experienced rapid growth in recent years, largely in response to the emergence of new technologies. For instance, Airbnb has gone from being a

²⁷ <https://www.zerowastescotland.org.uk/content/what-are-circular-economy-business-models>



curiosity in the accommodation sector ten years ago to being the largest single supplier of short term stays today. Most other circular business models – recycling and repair being good examples – are relatively mature.

- ✓ In some cases, the emergence of enabling technologies, more supportive consumer preferences, or new business risks will drive increased adoption of circular business models. Public policy also has a role to play. In particular, governments could focus on addressing widely cited barriers such as:
 - I. the mispricing of natural resources that results from under-priced externalities and the provision of subsidies for extractive sectors;
 - II. the transaction costs that hinder collaboration within and across value chains;
 - III. the trade policies that restrict cross border flows of used products and secondary material feedstock, and;
 - IV. the status quo biases that are often inherent in investment and consumer behaviour²⁸.

²⁸ <https://www.oecd.org/environment/waste/policy-highlights-business-models-for-the-circular-economy.pdf>