Slide 1

In this lecture, we will discuss different bottom up approaches in the circular economy.

Slide 2

Slide 3

Bottom-up approaches focus on the small scale: on individuals, small organizations, or communities. This approach looks at how individuals and local actors can be empowered to take actions and make decisions that will lead to change in the systems that they are concerned with. Bottom-up approaches often involve the participation of those most affected by the change, in particular average citizens. Education, training, and support are often important in order to create an environment where people can take control of their own lives, understand the systems they interact with, and make positive changes.

In Europe, bottom-up dynamics in the circular economy are very present, taking the form of initiatives from environmental organizations, NGOs, or civil society more broadly. These actors call for greener products, adequate legislation, and new initiatives to involve both private companies and public authorities in a virtuous cycle.

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The ReSOLVE framework, developed by the Arup group and the Ellen MacArthur Foundation, illustrates the major actions necessary for transitioning to a circular economy: Regenerate, Share, Optimize, Loop, Virtualize and Exchange.

It consists of six steps:

1. Regenerate - This step focuses on regenerating resources through the use of renewable materials and energy sources, as well as regenerative practices such as composting and responsible production.

2. Share - This step encourages businesses to share assets, skills and knowledge to reduce their waste and create value in the process.

3. Optimize - The aim of this step is to ensure maximum value is extracted from assets and resources. This could include strategies such as leasing, renting or upcycling.

4. Loop - This step focuses on closing the loop by creating closed-loop systems and minimizing waste. This could include strategies such as product take-back schemes and extended producer responsibility.

5. Virtualize - This step involves virtualizing resources and assets to reduce physical resource consumption. This could include strategies such as digital platforms, cloud computing, and remote working.

6. Exchange - This step involves exchanging resources and assets to create new value and reduce waste. This could include strategies such as product-as-a-service, bartering and sharing schemes.

The Resolve method in circularity is characterized by closed-loop approaches, resource efficiency/productivity, resource efficiency vs resource effectiveness and optimization of good/assets.

https://www.youtube.com/watch?v=JnXawXkZ6Mg

slide 5

Now, we will talk more specifically about the relationship of consumers to the circular economy

Slide 6

In this slide we will talk about the factors affecting consumer behavior, with particular focus on those that are relevant for pushing, or preventing, change to a more circular economy.

* Analysis of consumer behavior change often puts the emphasis on **economic factors** such as price, which is often where circular solutions struggle to compete since they price in more of the externalities of a production process than their linear competitors. These products, services, and processes are also often new to consumers, leading to an increased perception of risk and uncertainty. As such, consumer-facing businesses with a sustainability focus have an easier time marketing to groups with higher levels of disposable income, or those who are more motivated by other factors. Economic factors should be considered a necessary but not sufficient explanation for consumer choices, and other things do need to be considered.
* One of these other factors is the **information used to for choices** in consumption. There are at least three major questions that need to be asked here. First, does the consumer have access to full and correct information on the advantages and disadvantages of each product on offer? This includes things like different production processes, the environmental and social impact of each competing choice, durability and repairability of objects, and other aspects that can determine consumer choice. If that information is not easily available then the consumer is unable to make an informed, and potentially more circular, decision. The second question is whether the consumer is able to understand the information as it is presented. If information on competing options is presented in wildly differing formats, or in highly technical terms, many consumers will be unable to compare these options. For example, if one car manufacturer lists the climate impact of one of its models in terms of grams of CO2 avoided compared to the average of other similar cars and another manufacturer uses the amount of CO2 avoided per kilometer driven, a consumer will likely struggle to know which one has the better climate impact. Third, it is important to consider greenwashing and similar communication strategies. Many companies have a strong incentive to be viewed as leaders in sustainability while spending as little money as possible in that direction and will often communicate a great deal about relatively marginal improvements. This makes it more difficult for consumers to make informed decisions in two ways: by making non-sustainable (or circular) products and services seem greener, and by diminishing general trust in messaging intended to promote the ecological impact of products and services. The availability and accuracy of information is a prerequisite for changing consumer behavior, but to do so also requires that the correct products and services to fit the needs of the population actually exist.

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* **A fit between needs and offering** means simply that a consumer armed with accurate and complete information, as well as enough money, can find the product or service they want to purchase and that that purchase will fulfill their needs. Here, it is important to consider questions such as whether a more-circular option even exists for a given product or service, if circular options require more technical skills to own and maintain and would be less well-adapted to the needs of some populations, or whether a certain consumer need might simply be impossible to fulfill within a circular framework. These needs are usually understood as utilitarian, rational, use-value questions, but a major part of decision making in consumption is much more subjective.
* Although slower and more difficult to change for companies and policymakers, **preferences and beliefs** can be just as decisive in consumption decisions as the other factors mentioned. The subjective assignment of value to different aspects of a product or service, such as its convenience, its sustainability, or the social prestige associated with it guide many purchases, in particular among consumers who have significant disposable income. These dimensions are clearly changing over time in western societies, and we can see this in particular through differences in the consumption choices of younger versus older populations in the same society. When companies seek to market a new product or justify a higher price, such as one due to an increase in production costs associated with a switch to a more circular model, they often make reference to ecological or social values, hoping that their consumers will follow their preferences and beliefs. But these consumers are not isolated actors, independent from one another, rather they are embedded in a social fabric and this can also be determinant in their behavior.
* **Social factors** reflect the way that consumer choices are influenced by the role models, expectations, and norms of their community are often the sources of the preferences and beliefs we just talked about, but also operate directly on consumer choices by encouraging some and discouraging others. A social norm of avoiding waste and excessive spending is common in many older generations, while today’s role models might be more likely to provide examples of conspicuous consumption, for example. These norms are both hard to change by any organization and very powerful in shaping behavior, although widespread and well-organized movements of people can have a substantial impact on these factors over the long term.

These factors determine together what choices people with make in their consumer behavior, and whether they will adopt various more circular practices throughout the whole process of consumption.

Slide 8

Consumption and consumers are a primary consideration for both companies and public actors with general responsibility over the economy, as significant changes in consumer behavior will be essential to any successful transition to a circular economy.

The circular economy is poised to transform economic systems and contribute to sustainable development. However, the lack of market support or demand from consumers is one of the main barriers for small and medium companies to embark on circular projects.

In a 2019 paper, Camacho-Otero et al., provide a framework that breaks down the process of consumption into 6 stages, with associated circular consumer behaviors.

The first stage is acquisition, the process by which consumers gain possession of the objects to be consumed. Here, consumers can choose alternative modes of acquisition that reduce the resource impact of the things they are brining into their lives. They can re-buy used products, renting instead of owning them, or receive them through either gifting or exchange.

Next, the focus shifts to the different stages of the use phase of objects, which includes not only the physical dimension, but also the creation of meaning. This phase is divided into 4 stages.

Appropriation refers to how consumers incorporate the objects into their lives, habits, and activities. Appreciation comes when the objects surrounding the consumer everyday come to have either use or subject value or both for them. Devaluation then follows if objects no longer hold either that subjective meaning or use-value at some point, either through the degradation of the object or the simple passage of time. Finally, they divest themselves the objects by disposing of them. In the use phase of the consumption process, many options exist. Consumers can simply retain their objects for longer, refusing to abandon them as easily in response to cultural pressures such as in the fashion industry. As we will see later, consumers can repair objects to extend their useful lives and maintain their value, sometimes even leading to stronger emotional attachment and thus delaying disposal. Remunerating refers to finding ways to have these objects become a source of financial income, such as through renting a no-longer used car, thus adding to its usefulness.

In the end, many of the objects that a consumer acquires will end up being disposed of. Disposition can take a number of forms, from long-term storage to ending up in a trashcan. Objects at this point can then be returned to the system through various means including re-selling and relinquishing through gifting or donation.

To make some of these concepts more concrete, we now move on to a few examples taken from a domain that some of you might know something about: fashion.

Slide 9

Slow fashion is a movement that encourages consumers to buy fewer, higher-quality clothes and take care of them longer. In addition to people making their own clothing, this can include repairing, mending, and altering clothes, as well as buying used clothing. In each of these examples, think back to the previous slide and try to figure out which consumption stage or stages each one intervenes in and what circular behaviors it promotes.

**Making stations** are physical or virtual spaces where people can go to repair, alter, or customize their clothing. Some making stations are run by fashion brands or retailers, while others are community-based or run by volunteers. These stations can help extend the life of clothes and reduce the need for new clothing.

**Upcycling** refers to taking a finished product at the end of its useful lifetime and transforming it into something of greater value. In the context of clothing, this generally means taking old clothes or accessories, cutting them up or breaking them down to their constituent parts, and then reassembling them into something completely new. This can also mean taking non-clothing materials that otherwise would have made their way to a landfill or a recycling plant and using them to make clothing and accessories. The goal here is to avoid the continual degradation of value through the standard disposal and recycling processes.

**A wardrobe audit** is a process where someone assesses the contents of their wardrobe and determines which items they no longer need or use. This can help people declutter their wardrobe and make more conscious choices about what they buy in the future. Some organizations or fashion brands offer wardrobe audit services, while others provide information and resources to help people conduct their own audits.

**Clothing swaps** are events, or even locations like free stores, where people are able to bring clothing that they no longer want (such as things they may have eliminated during a wardrobe audit) and take clothes that other people brought, all for free. These initiatives promote community while also reducing overall resource consumption. It doesn’t have to be new, it just has to be “new to you” is the philosophy of these swaps.

These are just a few examples of how slow fashion can be promoted and implemented in society. The ultimate goal is to change the way we consume fashion, and shift to a more sustainable, circular system that values quality over quantity and is focused on long-term use rather than short-term consumption.

But these kinds of things don’t just exist in the realm of clothing and fashion: bottom-up initiatives are making our social and economic systems more circular in all kinds of ways.

Slide 10

On the left, you can see the first Repair Café, founded in 2009 in West Amsterdam. Repair Cafés are free meeting places, at the neighbourhood scale, that are all about repairing. These places are stocked with all the tools, materials, and friendly people willing to share the knowledge you need to repair broken household items. Concerned with the quantities of waste that is thrown away every day, Repair Cafés were initiated to cut the use of raw materials required to make new products, helping to reduce associated CO2 emissions.

On the right is Recycle on the spot, a Berlin team that is a part of an open-source recycling community called Precious Plastic. This international collection of designers, makers, collectors, and salespeople is aiming to create a simple, human-scale, distributed, modular industry in fabricating useful items from recycled plastic. Expanding from their starting point in Europe, they aim to sell their machines to companies, organizations and NGOs in south-east Asia, where plastic pollution is a huge problem and where they could create jobs and business opportunities for communities.

Slide 11

Thank you for listening. If you want to learn more about the roles of consumers, community initiatives, and average citizens in the circular economy please feel free to look at some of these resources online, as well as the links to sources at the bottoms of many of the pages of this presentation.

Slide 12

– no talking here –