

# CIRCULAR PRODUCT DESIGN GUIDE

Guide to Navigating Through the  
Process of Designing  
Circular Products

## How to Use This Guide

This guide is intended to be just that: a guide. In its contents you will find inspiration, direction, and food for thought. It is not a checklist of things to do. It is intended to be the tool you use to develop the circular future of IKEA, by setting up pre-requisites for the possibility of IKEA to harness the opportunities a circular economy offers us and our customers.

The future is up to you!





# Circularity through the Eyes of the Customer



Customer behaviors are changing and there is a growing awareness of the impact we have on the planet. Increasingly moving into smaller spaces, people have fewer things that they value more. Universally, no one wants to be wasteful, but people struggle to pass on things they think still have value.

The concept of circularity is complex and more than just recycling. Based on research conducted by GlobeScan in 2017, we know consumers and co-workers want to see the practical, financial, emotional or societal benefit directly connected to them and their family to start connecting to this topic. For them the sustainability impact is of secondary importance. Theoretical content does not reach them. Human voices are more effective, as long as the identified problems and solution are seen as relevant for them and represent the reality of where they live.

Through continuous engagement with consumers, we stay tuned into their problems, needs and wishes, and based on this develop new ways for them to acquire products, moving beyond ownership models, to also include possibilities for subscription. We want to help customers to restore value in their products by offering possibilities to repair, upgrade, and personalize. And, we are exploring solutions to make it convenient for customers to for example donate, return, sell second hand and recycle the products they no longer want.

By 2050, 70% of the world population will live in urban centers, challenging how people live. Urban spaces will continue to create demand for smaller, highly efficient and multi-functional solutions. This is already today changing the relationship people have with things. People are no longer connecting to a place, but to the things that surround them. Function and emotional connection to these things means they invest more time into prolonging the life of objects. People do not specifically seek out sustainable products, but 84% feel bad



about throwing things away, according to a study by GlobeScan. They fix, sell, or give away the things they have, at the same time feel hindered by this in realizing their dreams for a beautiful and functional home.

There are five main aspects customers take into consideration in their relationship with things:

**Value** – customers are looking to have less things. Instead they want the things they choose to be as good as possible, and therefore more valuable.

**Affordability** – is not just about the thin wallets. No one wants to sacrifice function, quality, design, or sustainability for low price, and sometimes customers prioritize spending their money on other things.

**Wastefulness** – our customers do not want to be wasteful, and feel bad about throwing things away.

**Convenience** – as one of the biggest hindrances to acquiring, caring for, and passing on products, convenience is the driving force behind customer behavior.

**Citizenship** – people want to be good citizens of the planet and contribute to the betterment of society and environment. There is a growing consciousness about consumption, and a wish to be more sustainable.





## Defining Circular IKEA: the Four Loops

Transforming IKEA into a circular business consists of adapting our existing 'take, make, waste' linear model to instead enable the prolongation of product and material life. The processes enabling this can be described as the four loops of reuse, refurbishment, remanufacturing, and recycling.

For IKEA, the starting point is always our customers' needs and wants. Through customer-centric, convenient solutions for repair, updates, and passing on of products, we aim to keep the product in use for as long as possible. It is only when products can no longer be repaired close to the customer that they move into the refurbishment and remanufacturing loops. Recycling is always the last resort.

### Circular Loops

Circular loops is how IKEA will transform from a linear to a circular business, impacting all aspects from how and where we meet our customers, how and what products and services we develop, how and what materials we source, to how we develop the IKEA supply chain. It is how we define reuse, refurbishment, remanufacturing, and recycling as a means to retain as much value as possible and extend the life of resources, products, parts and materials for our customers and IKEA.

### Reuse

Once customers acquire a product, the product enters the first circular loop of reuse. Reuse is how we describe the customer use of the product, and includes all aspects of normal product use and care such as maintaining its condition and adapting them to the evolving needs of life. This also includes passing on of products and enabling second hand markets.

### Refurbishment

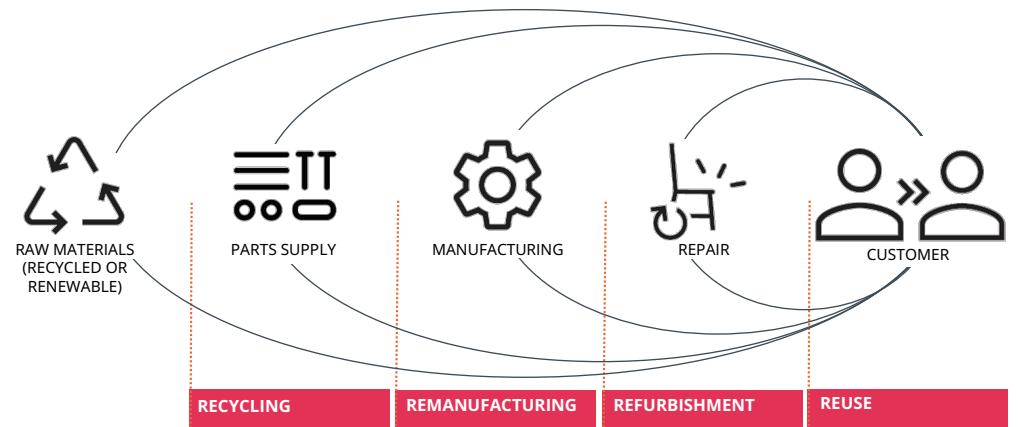
It is the process by which used, damaged, or non-compliant products are restored to 'like-new' condition with limited improvements. This includes repairs and upgrades made by customers or an after-market service in their home or at another location. Through refurbishment products are evaluated, cleaned and/or repaired, can be upgraded, recertified, and eventually released back into the market.

### Remanufacturing

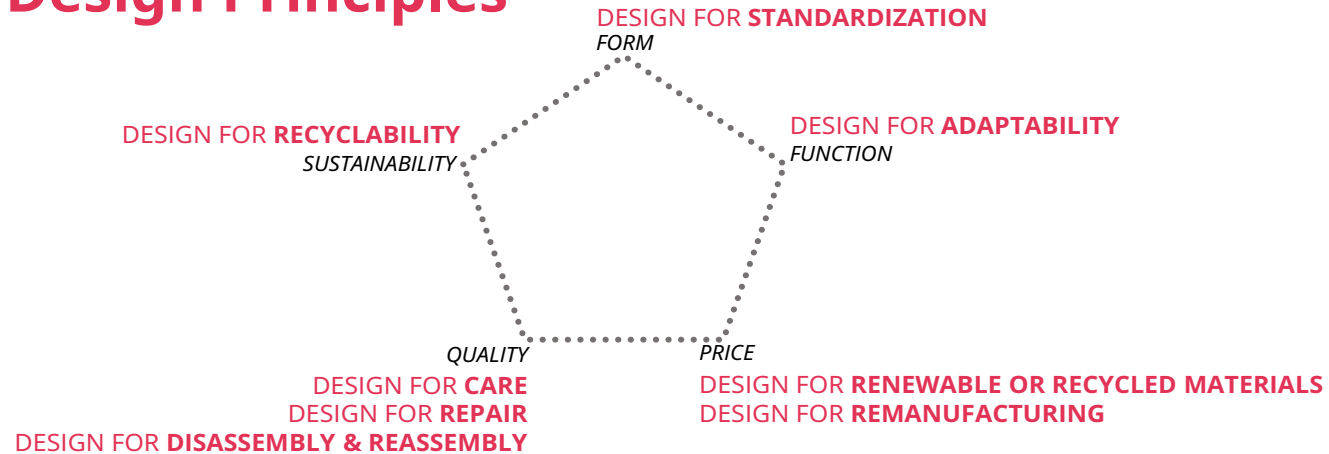
Remanufacturing of products is a process by which usable parts from dismantled products are utilized in production of new products, increasing resource recovery and potentially lowering the cost of the final product.

### Recycling

Recycling is the process by which parts from products are transformed into new raw material, which can then be utilized within IKEA or external supply chains. This is the last step for every product part. The pre-requisite for a product part to reach this stage in its life cycle, is that when relevant all possibilities to go through the reuse, refurbishment, or remanufacturing loops have been considered.



# Circular Product Design Principles



In 2017, the first draft of the 9 circular design principles was published in the Guide to Design for Circularity. This guide was our very first attempt at defining what circular design was all about and what demands it placed on the product design process.

Overtime, as development teams started to scrutinize the principles closer and attempt to implement them in new product design, a great many insights started to flood in around what aspects of design need to be addressed to enable truly circular products. These insights have triggered many questions, and it is reasonable to expect that new questions will come as we move through the process of learning how to design for circularity.

The second draft of the Guide to Design for Circularity was published in the summer of 2018. It represented a leap in understanding all aspects of circularity and what it meant for the implementation of the design principles in new projects. This version of the guide broadened our understanding of the circular design process and has served us well to identify new opportunities for clarification and future ways of working.

Democratic design is the foundation of design of all IKEA products and brings good design to the many people by providing well-designed home furnishing solutions, with great form and function, high quality, built with a high focus on sustainability, and at an affordable price.

The circular product design principles are built on our unique approach to democratic design, and are a part of IKEA's circular development toward reuse, refurbishment, remanufacturing, and recycling. They do not stand alone. They are one aspect to consider in developing a circular offer, living up to all our circular

commitments, and fulfilling the needs and wants of our customers.

Using the democratic design model to plot out which circular product design principles best fit into its five dimensions is a way to identify how to build in circular capabilities into each product while fulfilling the criteria of this unique formula, and not compromising on any other features of the product.

In this updated version of the principles, you will notice we no longer refer to any of them as mandatory. Overtime, we have realized there is no real priority in the principles. Rather, they are ingredients in a recipe that can be mixed to make many different circular solutions.

Other changes worth pointing out:

- Some principles have been redefined to better reflect fulfillment criteria and be measurable
- Lifespan and emotional connection are no longer design principles, rather will be defined during the circular business opportunity and circular loops work
- The principles are now divided into a group of general circular capabilities for all products in the IKEA offer, and specific capabilities that apply to many products but not all.

When working with the circular product design principles, it is important to see them as 'principles'. They are not designed to be a checklist. They are meant to guide you in deciding which circular capabilities should apply to the product to ensure it fulfills the business opportunity you have formulated earlier in the process.





## General Circular Product Design Principles

### DESIGNING FOR RENEWABLE OR RECYCLED MATERIALS

*Choosing the right materials from the beginning*

No matter how long the product will live, the materials used should always be renewable and/or recycled. It is one of the key commitments for our transformation into a circular business by 2030.

\*This principle is relevant for all four circular loops.

### DESIGNING FOR STANDARDIZATION

*Enabling care, repair, upgradability, refurbishment, remanufacturing, and eventually recycling of products over an extended period of time*

Standardization is one of the key considerations for circular design. It creates pre-conditions for products to move through the loops of reuse, refurbishment, and remanufacturing at a faster and more efficient rate, retaining value up to their full potential. By using standardized fittings, the number of spare parts needed is reduced, thereby limiting the amount of waste. Standardization creates possibilities for modularity, exchange and repair of broken parts, and compatibility.

There are three main ways to secure standardization in our products:

1. Use of shared solutions, fittings, and parts
2. Use of standardized materials and recommended colors
3. Use of standardized components to secure interchangeability with other brands.

\*This principle is relevant for all four circular loops.

## Specific Circular Product Design Principles

### DESIGNING FOR CARE

*Extending the life of products through maintenance and prevention*

The first step to ensuring products last longer is by enabling the possibility for customers to care for their products throughout the time they own them. When developing products, it is important to think about how the products will be used in daily life. Are there parts that can easily wear out, and should be redesigned to last longer? What potential maintenance will the customer have to do to keep the product in tip-top shape? By answering questions such as these, product design and care instructions can minimize potential wear and tear to materials and components, and anticipate what maintenance activities are needed. In addition, products for care and maintenance can be developed and made easily available to customers.

\*This principle is relevant for the Reuse circular loop.

## DESIGNING FOR REPAIR

*Products that are easy to repair when something goes wrong*

Accidents happen, and sometimes a product is used so often it finally breaks. But, this does not have to be the end of its usefulness. We can anticipate potential risks for breakage, by understanding the daily use of the product. Need for repair should be addressed early in the design process. By utilizing relevant information from for example customer ratings and reviews, and spare parts customers ask for in similar products, parts that break often can be identified, and redesigned. Secondly, convenient repair solutions should be made available for customers whenever they need them. Identify what parts are likely to break and work with relevant stakeholders to ensure their availability for customer at-home repair, refurbishment, or when necessary replacement.

\*This principle is relevant for the Refurbishment circular loop.

## DESIGNING FOR ADAPTABILITY

*Products that can fulfill evolving customer needs*

In order for a product to stay in use for as long as possible, it is important that it can adapt to the life in the home of the customer. IKEA market intelligence and ratings and reviews may be helpful in identifying these potential life changes. By designing products to be adaptable to changing living situations and evolving needs, customers can add on, remove, or change parts of products instead of needing to buy new ones. Good design makes it possible to change the style, form, or function of a product by for example altering configurations through modular design, customizing surfaces, changing fabric, specifying function, and more.

\*This principle is relevant for the Reuse and Refurbishment circular loops.

## DESIGNING FOR DISASSEMBLY, AND REASSEMBLY

*Making reuse, refurbishment, remanufacturing easier and more efficient*

Disassembly and reassembly should account for how many times the product will require this capability throughout its lifespan as it moves through the relevant loops. When designing products for reuse, they must be easy to disassemble and reassemble, eliminating the risk of breakage when moving them within a customer's home, between different homes and customer, store and refurbishment centers. This addresses the customer complaint that they are not able to move our big furniture without it breaking. When products are refurbished, this will also enable detachment and reattachment of parts that need to be repaired, upgraded, or replaced. During the process of remanufacturing, reusable parts will be easily

separated without lost functionality.

\*This principle is relevant for the Reuse, Refurbish, and Remanufacture circular loops.

## DESIGNING FOR REMANUFACTURING

*Utilizing existing materials and parts in production of new products*

In the world of limited resources, our products play an important role in becoming the resources for the future. Through remanufacturing, we can utilize usable parts from old products for new ones. To enable efficiency in this process, it is important to understand the process of remanufacturing, and have a close relationship with the remanufacturing partners and product engineers. Small changes in the development of new products and utilizing standardization, can save material, chemicals, water, and energy. This is also a great way to contribute to a lower product price.

\*This principle is relevant for the Remanufacturing circular loop.

## DESIGNING FOR RECYCLABILITY

*Choosing materials and how they are combined to enable recycling*

Products today are our material banks for the future. They can be up-cycled or recycled.

Products designed for recyclability are utilizing materials that are recyclable, and can be easily separated, based on knowledge about the industrial recycling processes.

\*This principle is relevant for the Recycling circular loop.





## Defining Product Lifespan

How can an expected product lifespan be defined? This question can only be answered by combining customer behavior knowledge with the wished business opportunities for the product, such as re-selling, care and repair solutions, subscription models. The expected lifespan will be based on a choice between single prolonged use of a product versus multiple uses. This is determined by the chosen business opportunity. By going through the exercise of assessing these factors before the product development process starts, lifespan is understood.

## Creating Emotional Connection Through Design

Together with great functionality, an emotional connection is the reason for people to maintain, repair, and not throw away a product. Objects that hold memories and tell stories are special because they represent and remind us of the most important parts of our lives. Those memories are something more important than the product itself. IKEA can establish an emotional connection between a product and a customer by enabling a convenient experience that appeals to their motivations: perceived value, affordability, addressing feelings connected to wastefulness, and citizenship. Each customer creates their own story around how they acquire, care for, and pass on the product. By providing a positive experience through all the phases of this journey, they are able to build an emotional connection not only to the IKEA product, but to our brand as well.

Another way to create a connection is to include unique details in the design of the product. This could be through possibilities to personalize, use meaningful collaborations, shared designer intentions, handmade production, and limited editions.

Developing products with functionality that supports sustainable and healthy living, is what we refer to as designing for 'functional sustainability'. It enables a savings of money, time, energy, and resources by helping customers to grow their own food, clean the air, save water, and more. It is another opportunity to create an emotional connection that will last. This again deepens the customers' appreciation for our brand, and when they no longer want the product, they are much more likely to sell it, refurbish it, or give it away, rather than just throw it out.





