DESIGN & SUSTAINABILITY

case examples

SUSTAINABILITY PILLARS

ENVIRONMENTAL
SUSTAINABILITY

ECONOMIC
SUSTAINABILITY

SOCIAL
SUSTAINABILITY

Sustainability pilars

ENVIRONMENTAL SUSTAINABILITY

ECONOMIC SUSTAINABILITY

SOCIAL SUSTAINABILITY

Design phases

1 IDENTIFYING OPPORTUNITIES

2 IDEATING SOLUTIONS

3 EXPERIMENTING & TESTING

4 PRODUCING & IMPLEMENTING
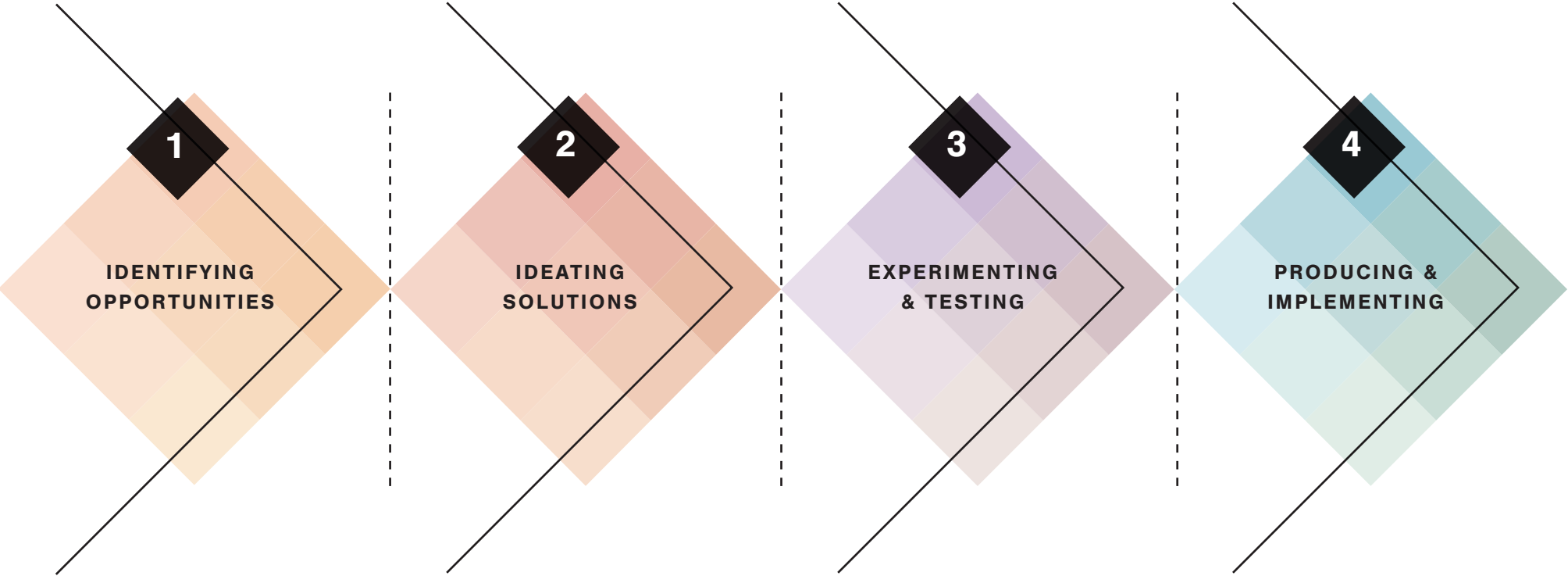
ENVIRONMENTAL SUSTAINABILITY

CASES:

◆ **Fiskars ReNew Scissors:**
RECYCLABLE MATERIALS

◆ **City of Helsinki:**
RENOVATING FOR ENERGY EFFICIENCY

◆ **Finnair Clean Kit:**
LOCAL SOURCING

◆ **Iittala Vintage, Fiskars:**
PROMOTING RECYCLING

◆ **Reinvent the Toilet challenge, Gates Foundation:**
UNDERSTAND USE

◆ **Timeless aesthetic:**
TRANSPARENCY OF IMPACT

◆ **Bird collisions with power lines:**
VALUE WITH A LOW-TECH SOLUTION

◆ **Phasing out incandescent light bulbs:**
ENERGY EFFICIENCY

◆ **Bottle and can returns in Finland:**
DEPOSIT-REFUND SYSTEMS

Case: Fiskars ReNew Scissors
RECYCLABLE MATERIALS

Fiskars launched a new version of its classic scissors in 2020. The new scissors are fully recyclable including 80% recycled material and 13% cellulose fiber. To recycle the scissors, the user must send them to the Fiskars Billnäs factory. There, the scissors are taken apart and the materials are sent to subcontractors for refinement. The renewed materials are then brough back to Fiskars and used to make new recycled scissors.

REFLECT:

- **What do you think caused Fiskars to launch the new scissors in 2020?**
- **How different is the environmental impact of the new scissors compared to the classic ones?**

APPLY:

- **Which recycled materials used in the scissors will have the most significant environmental impact?**
- **How could you make recycling easy for the user?**

Read more:

- **https://www.fiskars.com/en-gb/scissors-shears/products/recycled-scissors?showAll=true#aq=@categories%20==%20 (%22recycled_scissors%22)&numberOfResults=1000**

Case: City of Helsinki
RENOVATING FOR ENERGY EFFICIENCY

City of Helsinki supports energy renovations for buildings. Energy renovations decrese heating costs and increase the value of buildings. This makes them financially viable for nearly all blocks of flats in Helsinki. Renovation of existing structures also has a smaller carbon footprint than the construction of new houses or apartments.

REFLECT:
- **When could an energy renovation be the wrong choice?**
- **How else could City of Helsinki improve its energy efficiency?**

APPLY:
- **Could you renovate an existing solution instead of creating a new one?**
- **How could better energy efficiency make your solution more financially viable?**

SEE ALSO:
◆ **Social Sustainability: ADDING SERVICES**

Read more:
- **https://helsinginilmastoteot.fi/en/energy/**

Case: Iittala Vintage, Fiskars
PROMOTING RECYCLING

Through Iittala Vintage service, Fiskars buys used Iittala dishes back from consumers. The company then either resells or recycles the used products, depending on their condition. When users bring old products to Iittala stores, they are paid in gift cards. Products are paid for based on their type and condition. The service helps people dispose of Iittala products in an environmentally friendly way. At the same time, it promotes the value of the brand's vintage products, reaching both customers buying new products and customers preferring vintage ones.

REFLECT:

- Have you seen similar services operated by other companies?

APPLY:

- How could you help people dispose your used product in an environmentally friendly way?

SEE ALSO:

◆ Identifying Opportunities: VALUE CREATION VIA 2ND HAND MARKET

Read more:

- https://www.iittala.com/en-gb/about-us/sustainability/vintage-service

Case: Finnair Clean Kit

LOCAL SOURCING

Finnair sourced most parts of its Covid-19 Clean Kit from Finland. For example, the kit came in a paper envelope made from Finnish paper. Also, the kit was illustrated by a Finnish print designer, and it had hand sanitizer made by a Finnish distillery. Sourcing these items from Finland was new to Finnair. However, doing local sourcing for a small cleaning kit helped the company learn how it could be done in bigger projects.

REFLECT:

● What factors contribute to a product being defined as 'local'?

APPLY:

● Could you source parts of your product locally?
● How could Finnair more significantly reduce their negative environmental impact?

SEE ALSO:

◆ Producing & Implementing: LOCAL SOURCING

Read more:

● https://runwaygirlnetwork.com/2020/07/finnair-goes-local-in-designing-and-sourcing-new-clean-kit-and-masks/

● https://www.finnair.com/en/bluewings/world-of-finnair/see-finnair-s-updated-in-flight-service-for-safer-flying-2131952

Solar panel

Air filter

Conveyor belt

Solids

Liquids

Sand filter

Conveyor belt

Liquids trough

UV lamp

Smoldering waste

Case: Reinvent the Toilet challenge, The Gates Foundation

UNDERSTAND USE

The Gates Foundation has given billions of dollars to sanitation development for developing countries. However, many cheap and clean toilet concepts exist already, and the sanitation crisis still goes on. Many say that the real problem is making toilets work "on the ground." The real question might be how to maintain toilets in under-resourced communities. Or, how to make sure that people feel safe going into public toilets at night.

REFLECT:

- Why do you think Gates Foundation wants to solve the sanitation crisis through new technology development?
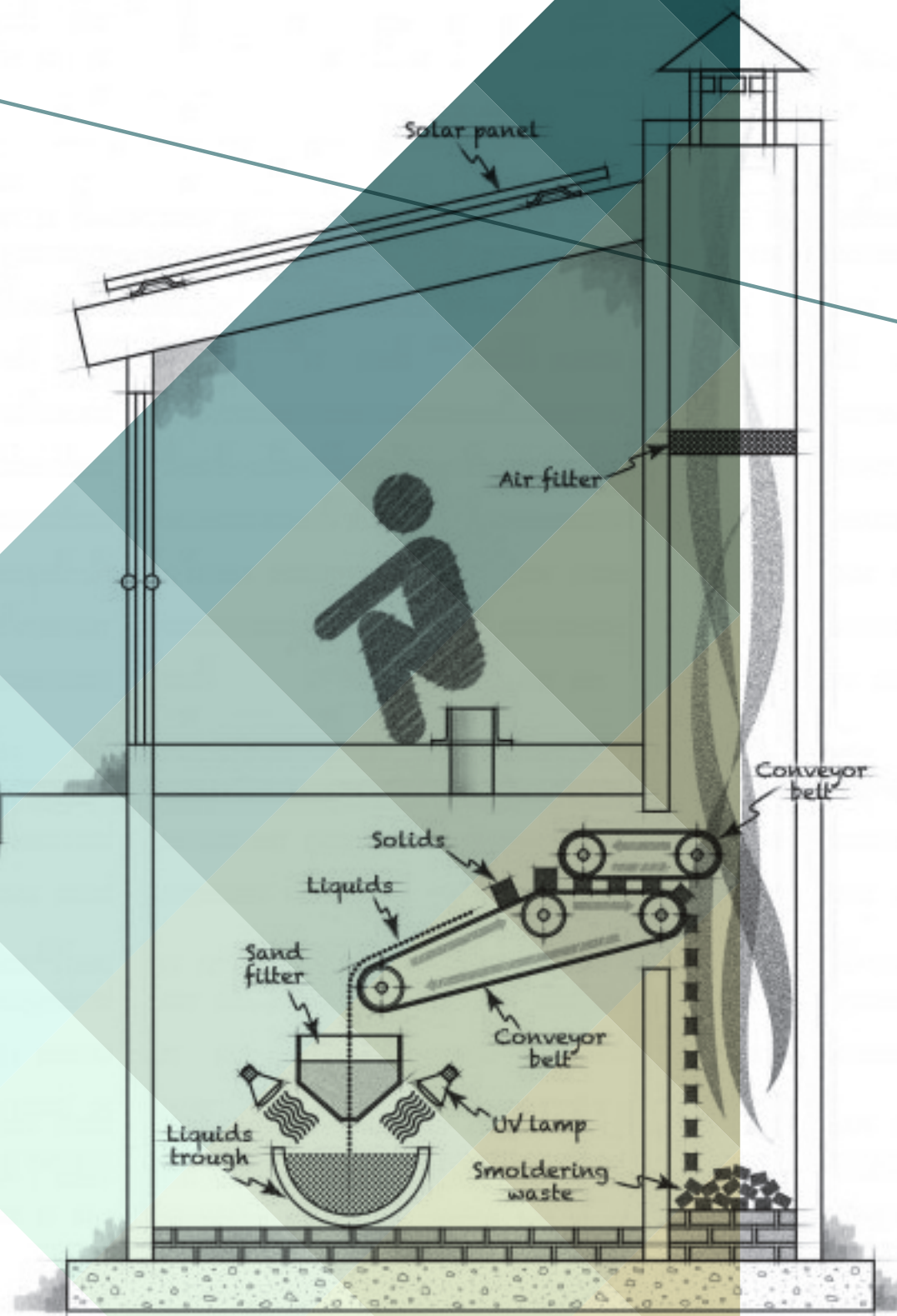
APPLY:

- Is a new product needed for the problem you are trying to solve?
- How could you make sure that your product will change how people behave for the better?

SEE ALSO:

◆ Identifying Opportubnities: UNDERSTAND USE

Read more:

- https://design-justice.pubpub.org/pub/0v6035ye/release/2?readingCollection=9eadecb0#design-challenges-full-of-crap-notes-on-the-gates-foundations-reinvent-the-toilet-challenge

Case: ABB EnergySave calculator
TRANSPARENCY OF IMPACT

ABB offers an online service for calculating the energy use of drives. Drives manage transmission and can power a range of industrial equipment and machinery. The service also compares the energy use of ABB drive controls to "existing control methods." Users can define the application and other technical properties for their drive use case. The service outputs information on how much the user could save in, for example, CO_2 and money by using ABB solutions.

REFLECT:

- **When might people use ABB's Energysave calculator?**
- **What aspects increase and decrease the calculator's trustworthiness?**

APPLY:

- **How could you communicate the environmental benefits of your solution?**

SEE ALSO:

◆ **Producing & Implementing: TRANSPARENCY OF IMPACT**

Read more:

- **https://new.abb.com/drives/software-tools/energysave-calculator**

Case: Timeless aesthetic

DESIGN FOR REFURBISHING

Many people gravitate toward timeless designs when buying refurbished products. For example, minimalist products are thought to be from good brands and may remain desirable even when they are not new. Also, used products that look retro are thought to be high quality. However, people usually do not want to see signs of use (such as scratches) or reduced functionality (such as shorter battery life) when buying used products.

REFLECT:

- What other styles might be desirable for a longer period of time, in addition to minimalist and retro styles?
- Could there be other aspects that effect how much people like refurbished products?

APPLY:

- How could your product look and feel timeless?
- Could your product be made easier to refurbish?

Read more:

- Wallner, T.S., Magnier, L. and Mugge, R., 2020. An exploration of the value of timeless design styles for the consumer acceptance of refurbished products. Sustainability, 12(3), p.1213.

- Wallner, T.S., Magnier, L. and Mugge, R., 2022. Do consumers mind contamination by previous users? A choice-based conjoint analysis to explore strategies that improve consumers' choice for refurbished products. Resources, Conservation and Recycling, 177, p.105998.
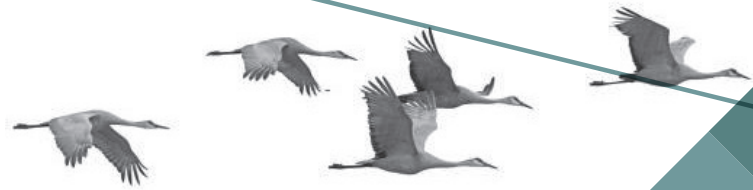
Case: Bird collisions with power lines

VALUE WITH A LOW-TECH SOLUTION

During bird migration, many birds fly into power lines and get injured or die. This can be harmful for biodiversity, especially when it happens to endangered birds. In Finland, the problem is tackled with a low-tech solution: by hanging orange balls on power lines. Birds see and avoid the balls as they fly. Local bird enthusiasts can request electricity companies to install the balls in places through which birds commonly migrate.

REFLECT:

- **How might you remove the problem of bird collisions when installing new power lines?**

APPLY:

- **Could you consider a low-tech solution in your project?**
- **Could you involve some local communities in your project?**

Read more:

- https://www.scientificamerican.com/article/birds-are-dying-from-power-line-collisions-mdash-now-theres-a-solution/

Case: Phasing out incandescent light bulbs

ENERGY EFFICIENCY

Many countries are phasing out incandescent light bulbs. These bulbs are not energy efficient in producing light, as they produce a lot of heat as a side effect. This is a problem especially in warmer climates. A 2008 study done in Canada found that changing to fluorescent bulbs saved about 26% in house lighting energy consumption. The study found that even within houses that require winter heating, fluorescent lights would save energy overall.

REFLECT:

- **When could incandescent light bulbs still be useful?**
- **Do you think the results of the study would change if it was done now? How?**
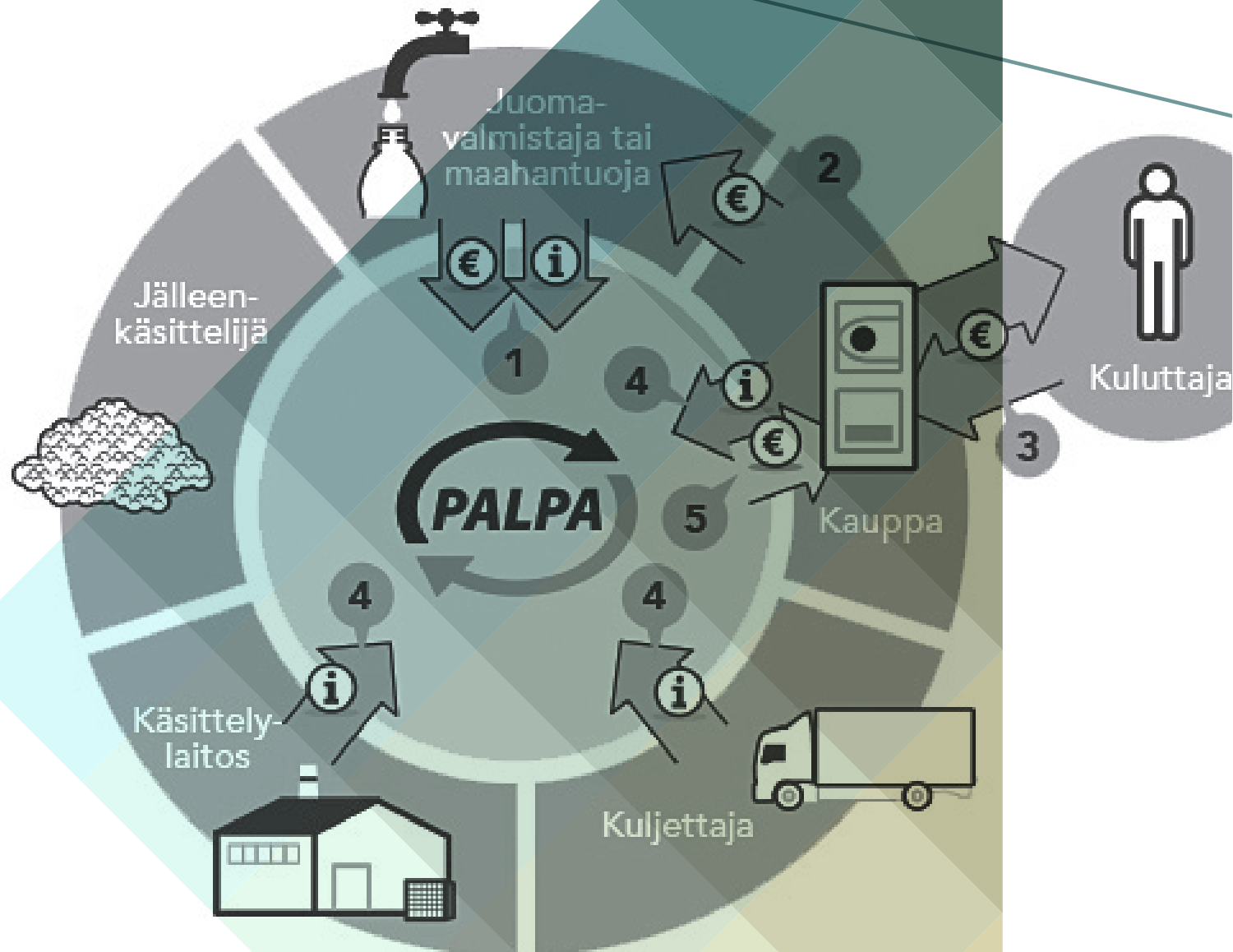
APPLY:

- **How could you reduce the production of unnecessary energy in your solution?**

Read more:

- **https://nrc-publications.canada.ca/eng/view/ft/?id=e315a81c-8a79-4d60-b057-d1c3450839e3**

Case: Bottle and can returns in Finland
DEPOSIT-REFUND SYSTEMS

Finland uses a deposit-refund system for bottles and cans. People can return bottles and cans of almost any kind to specific machines and receive a small refund. The amount of the refund is added to the price of each bottle. Partly thanks to this system, Finland's recycling rate for bottles and cans is more than 90%, which surpasses EU-level goals. The deposit-refund system is managed by Palpa, a nonprofit company.

REFLECT:

● **What other products could use a deposit-refund system?**

APPLY:

● **Could you use a deposit-refund system in your project?**

Read more:

● https://finland.fi/life-society/circular-economy-success-finlands-recycling-programme-keeps-bottles-and-cans-off-the-streets/

● https://media.rff.org/documents/RFF-DP-11-47.pdf

ECONOMIC SUSTAINABILITY

CASES:

◆ **Isku:**
AVOIDING SHORT TRENDS

◆ **City of Helsinki:**
PARTICIPATORY BUDGETING

◆ **Patagonia:**
ENVIRONMENTAL INTERNSHIPS

◆ **Patagonia living wage:**
LIVING WAGES IN THE SUPPLY CHAIN

◆ **Nanso:**
DESIGN FOR AFFORDABILITY

◆ **Electric vehicle charging, Virta:**
CREATING SHARED VALUE

Case: Isku
AVOIDING SHORT TRENDS

Products that look timeless can be good financial investments. At Isku, developing new furniture can cost 200,000 euros and take over a year. If the furniture is created in response to a fashion trend, it may sell well for only a short period. Customers tend to find objects that feature a classic, timeless design aesthetic desirable for longer periods of time.

REFLECT:

- **What makes a product or service appear timeless?**
- **What would be a counterargument for timelessness?**

APPLY:

- **What trends do you follow in your project?**
- **How could you solution look and feel timeless?**
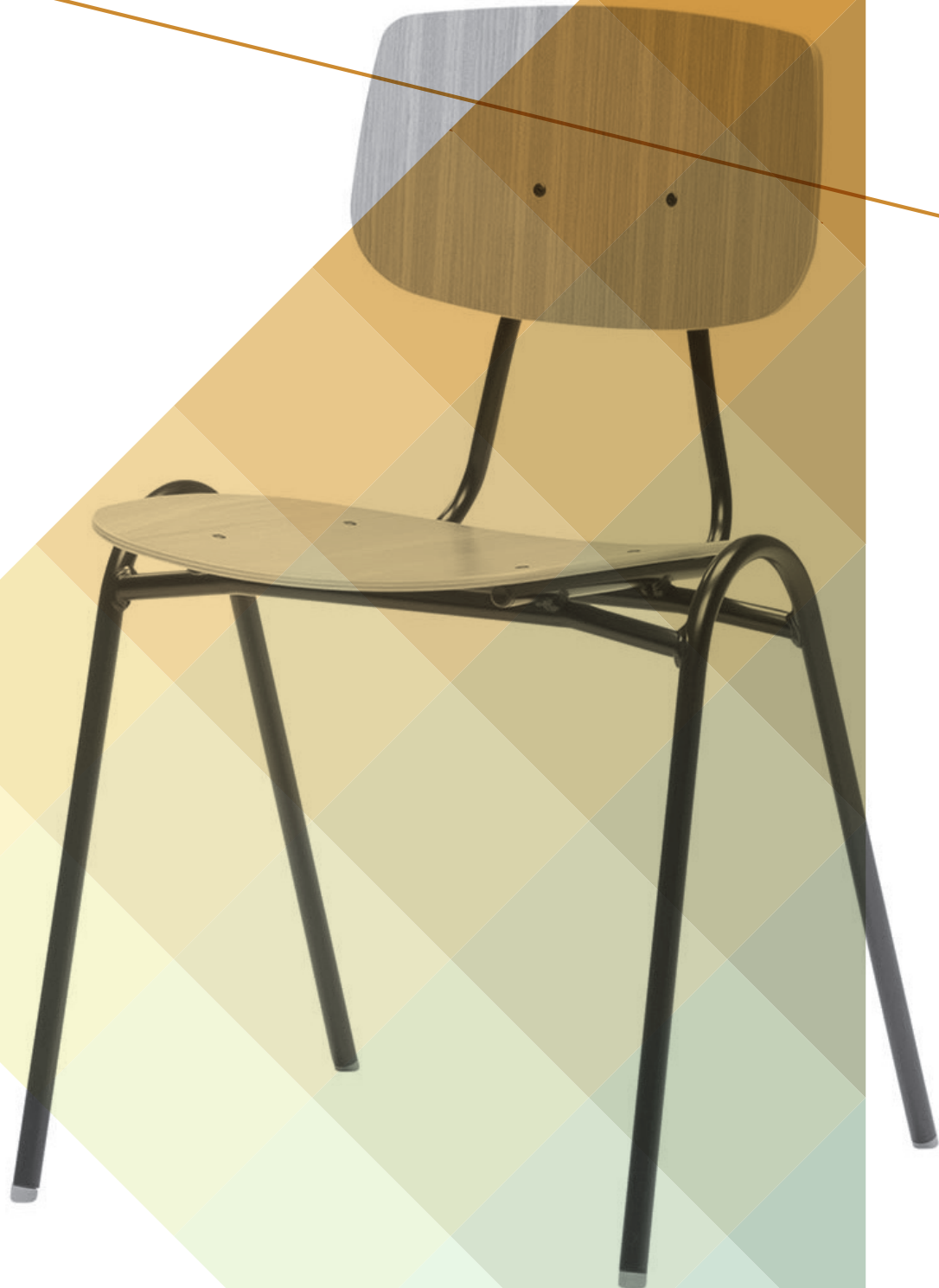
Case: City of Helsinki
PARTICIPATORY BUDGETING

In 2021, the City of Helsinki put 8.8 million euros into carrying out ideas suggested by residents. In this OmaStadi initiative, citizens first proposed ideas and then refined them together with the city's experts. Finally, citizens voted for which ideas the city should implement. Almost 50,000 people voted (8.1%) on 396 ideas, and 75 were selected. Similar participatory budgeting activities exist also in other cities around the world.

REFLECT:

- **What do you think are the risks of participatory budgeting?**
- **How would you ensure that everyone can truly participate in an initiative like OmaStadi?**

APPLY:

- **Could you work together with users or customers to scope some parts of your project?**

Read more:

- **https://omastadi.hel.fi/?locale=en**

Case: Patagonia

ENVIRONMENTAL INTERNSHIPS

The outdoor clothing company Patagonia helps their employees do volunteer work with not-for-profit organizations. For example, employees can apply for two-month internships in environmental nonprofits. During the internships, employees still get their normal pay and benefits from Patagonia. In 2022, 34 people went on such internships (out of 1,000 employees). Many other USA based companies give similar benefits, such as a few days per year to do volunteer work.

REFLECT:

● **Why do you think Patagonia helps employees do work that does not directly benefit the company?**

APPLY:

● **Could your project support or work together with nonprofits?**

Read more:

● https://www.patagonia.ca/story-17843.html

Case: Patagonia living wage

LIVING WAGES IN THE SUPPLY CHAIN

The outdoor clothing company Patagonia wants every person in its supply chain to earn a living wage. This is hard, because living wage varies in different countries and there is not always good data available. So, Patagonia works with other organizations to develop better data collection methods. The methods help estimate living wages and vet companies in the supply chain. In 2020, 39% of Patagonia's apparel assembly factories were paying employees a living wage.

REFLECT:

● **Why do you think Patagonia wants to screen its supply chain so rigorously?**

APPLY:

● **How could you ensure that your solution is built in companies that treat their employees fairly?**

Read more:

● **https://eu.patagonia.com/fi/en/our-footprint/living-wage.html**

Case: Nanso

DESIGN FOR AFFORDABILITY

To design for affordability, one must first consider how much customers are willing to pay for a solution. Finnish clothing company Nanso begins their product development from this starting point. The company's aim to make affordable clothing can be seen in both their material and production choices. Designing for affordability involves simplifying the solution and the supply chain used to deliver it.

REFLECT:

- How could a company like Nanso define how much customers are willing to pay for clothes?

APPLY:

- What counts as affordable for potential customers in your project?

SEE ALSO:

◆ Producing & Implementing: DESIGN FOR AFFORDABILITY

Case: Electric vehicle charging, Virta
CREATING SHARED VALUE

Virta is a company that makes and manages electric vehicle (EV) charging stations and services. Since EVs promote environmental sustainability, Virta can use normal business strategies (such as aiming for quick growth) and still remain sustainable. This follows the principles of "creating shared value", where a company creates economic profit by addressing fundamental challenges in society.

REFLECT:

- **What other fundamental societal challenges can you think of, in addition to preserving nature?**

APPLY:

- **Could your project target some societal need or challenge?**

Read more:

- **http://www.relativimpact.com/downloads/HBR-Shared-value.pdf**

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☒ Ohjeet
☒ Instructions
☒ Instruktioner
virta.fi/info

VIRTA

CASES:

◆ **Gold&Green:**
DESIRABILITY TESTING

◆ **City of Helsinki:**
ADDING SERVICES

◆ **VR Group:**
INCLUSIVE SOLUTIONS

◆ **Research insight:**
TARGETING THE SITUATIONALLY IMPAIRED

◆ **Fazer:**
USE IN MODERATION

◆ **Helsinki Central Library Oodi:**
DEMOCRATIC PARTICIPATION

◆ **Chillaa application for mental health:**
RESPOND TO A REAL NEED

Case: Gold&Green

DESIRABILITY TESTING

Gold&Green made plant-based food. People generally like tasting new foods, and the company used this to their advantage when including people in their testing process. First, they had a volunteer group test new products. The group recieved free food samples and gives the company feedback. Second, Gold&Green gave a lunch restaurant free food ingredients to make new meals. The restaurant collected feedback on the ingredients from chefs and final meals from clients.

REFLECT:

● **What effects could continuous testing have on development work?**

● **Why do you think Gold&Green started their feedback collection?**

APPLY:

● **What feature of your product do you think people would like to test?**

● **How could you get continuous feedback?**

Case: City of Helsinki
ADDING SERVICES

City of Helsinki helps housing associations do energy renovations. For example, the city gives free expert advice and online information. These services help housing associations make better decisions. Also, the services help residents get the most out of products, like new heating and ventilation systems.

REFLECT:

- Is the City of Helsinki a trustworthy source of information on energy renovations? Why?
- What roles do civil services and private organizations play, in making information about available services accessible to people??

APPLY:

- What information services could help people implement your solution?
- What would people need to know when using your solution?

SEE ALSO:

◆ Environmental Sustainability: RENOVATING FOR ENERGY EFFICIENCY

Read more:

- https://helsinginilmastoteot.fi/en/energy/

Case: VR Group
INCLUSIVE SOLUTIONS

VR Group (Valtion Rautatiet, the national railway company in Finland) aims to listen to everyone's needs. This means that trains and trams must work for all, including people in wheelchairs, and those with reduced hearing, reduced vision, or cognitive restrictions. With this in mind, the Tampere Tram was tested by people with diverse levels of mobility. Also, most VR trains include accessibility features, such as braille text, high-visibility colors, and low floors.

REFLECT:

● **How do you think accessibility impacts VR's business?**

APPLY:

● **What vulnerable groups of people might use your product?**

● **How could your product be made usable for all?**

SEE ALSO:

◆ **Experimenting & Testing: INCLUSIVE SOLUTIONS**

Case: Research insight
TARGETING THE SITUATIONALLY IMPAIRED

Anyone can be situationally impaired when using products. For example, a person may talk on the phone while driving, impairing their reaction speed. Also, anyone can hurt their leg, which may impact their mobility, or find daily activities too strenuous due to illness. Designing products in such a way that they negate or decrease the impact of situational impairment, improves their everyday usability for everyone.

REFLECT:

- What would be an example where situational impairments cause danger?

APPLY:

- How might people be situationally impaired when they use your product?
- How could your product be made usable in difficult situations?

Read more:

- Research on simulated situational impairments in user testing: Lin, J. and Seepersad, C.C., 2007, January. Empathic lead users: the effects of extraordinary user experiences on customer needs analysis and product redesign. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 48043, pp. 289-296).

Case: Fazer
USE IN MODERATION

Fazer supports moderate use of its food products. For example, the company publishes information on how to eat confectionary in moderation. Fazer also marks portion sizes on packages, and suggests that large packages should be shared with others. Still, Fazer's current confectionary business relies on people buying more sweets, and larger packages often tend to have lower per weight price. Thus, balancing business outcomes and moderate use can be hard.

REFLECT:

● **What might Fazer's offering look like if everyone ate sweets in moderation?**

● **What could be more effective ways for Fazer to encourage moderation, while still maintaining business outcomes?**

APPLY:

● **What harm could come from overusing your product?**

● **How could you encourage moderation in using your product?**

Read more:

● **https://www.fazergroup.com/well-being/health–nutrition/fazer-groups-principles-for-balanced-diet/**

Case: Helsinki Central Library Oodi
DEMOCRATIC PARTICIPATION

City of Helsinki wants its habitants to have a say in the city's services and decisions. For example, many types of people took part in designing the Oodi library. Designers gathered ideas from teens, families, children, immigrants, and people who do not usually go to libraries. They raised awareness of the project with small pop-up libraries and campaigns. Helping other people take part in design makes projects more democratic.

REFLECT:

- **Can you see the impact of participatory design in Oodi today?**
- **What might be the challenges of involving underserved communities in design projects?**

APPLY:

- **Who should have a say in how your product is designed?**
- **How could you encourage people to take part in the design of your product?**

SEE ALSO:

◆ **Identifying Opportunities: DEMORATIC PARTICIPATION**

Read more:

- https://www.fazergroup.com/well-being/health–nutrition/fazer-groups-principles-for-balanced-diet/

Case: Chillaa application for mental health

RESPOND TO A REAL NEED

Adventure Club developed an app to help youth manage anxiety. Their clients include mental health organizations, such as Helsinki University Hospital Psychiatric Department. Managing anxiety is important because it can lead to additional mental health problems, like depression. Almost all youths experience anxiety in their daily lives.

REFLECT:

- **How could a design studio like Adventure Club encourage other clients toward projects that address critical needs in society?**

APPLY:

- **How could your project contribute to a real need, such as one of United Nations' Sustainable Development Goals?**
- **What expert organizations could you collaborate with to understand needs better?**

SEE ALSO:

◆ **Experimenting & Testing: RESPOND TO A REAL NEED**

Read more:

- http://adventureclub.io/competition-entries/2019/chillaa/