The brief

2021 student service design challenge

How to design backwards to move forward?

Now is the time
Immediately after the coronavirus outbreak and the following local lockdowns, businesses and organisations needed to design new or improve existing services to reach people inside their homes; bringing goods to communities, teaching students, supporting employees working remotely, and many other services.

In the so-called first wave, we saw how sales of non-discretionary products, such as food, household, and personal-care products, spiked during the lockdowns, while sales of discretionary items, such as apparel and furnishings, tailed off. Many small and large organisations showed (agile) resilience in adapting to the 'new normal', the altered environment in which their products and services were used or consumed.

Unfortunately, this agile adaptation to a new situation based on a sense of urgency hasn't been seen in services at the end of the product life cycle. We should feel the same sense of urgency when we talk about climate change, food waste, pollution, overexploitation, and poverty. Forward logistic services are continually evolving, and the optimisation of the 'user experience' is the driving force. However, with reverse logistic services, the opposite seems the norm.

Reverse logistic services
What are forward and reverse logistic services? Forward logistic services are used to manage the forward movement of goods from raw materials to the consumer. Value is added to the product as it passes through each step along its journey to the final user. Reverse logistic services are those used to manage the 'reverse' movement of goods, from the end user to the manufacturer, or even back into raw materials through recycling. They encompass recapturing the value of products, parts, and materials by servicing their return from the end user. Some potential areas for new and valuable reverse logistic services and breakthrough closed-loop business models are:

- Movement of capital equipment and products to the next consumer, owner, or other context of use
- Reuse or return of packaging and containers from goods and consumables
- Disposal of expired and spoiled single used goods and reprocessed goods, food products, pharmaceuticals, etc.
- Return of used goods to the producer
- Movement of extra or over-supplied products and materials (for instance construction materials, medical residuals)
- Commercial returns

Two cases - Nespresso and InterfaceFLOR
Reverse logistic services are still rare and in many cases overlooked. An example; in 1976 Nespresso designed an innovative coffee system based on capsules, a new, convenient way to make coffee at home. A website, local stores and a loyalty card system were designed to deliver a great experience and attract new and existing clients to purchase more and more capsules. But what about the used capsules? Nespresso didn't think of the whole lifecycle, and forgot to design a service to involve coffee drinkers in easily collecting, dismantling, reusing or recycling the capsules and the coffee pulp. Since 2010, Nespresso has been making its own recyclable aluminium capsules, which people have to return to Nespresso to be processed at

the company's recycling factory. In some countries, Nespresso offers a service that collects them from customers' homes.

Some 14 billion Nespresso capsules are sold every year, both online and from over 800 boutiques in more than 80 countries. Over 400 Nespressos are drunk every second. Hundreds of rivals and imitators have emerged, some making capsules for Nespresso machines, others pushing competitor systems. But why isn't this a huge success? With the possibility to drop off used capsules at the Nespresso boutiques and other locations, there is still no reverse logistic service in place, let alone the commitment and involvement of all Nespresso coffee drinkers. In 2020, Nespresso's global recycling rate was 30%[1].

Let us be clear, Nespresso isn't the only example. Many manufacturers focus on making beautiful products, seamless purchase journeys, and omni-channel customer service processes. But without a human-centred approach, a circular mind-set, a well-crafted service blueprint, and a viable business model, a reverse logistic service won't become successful for people, planet, and profit[2].

Here is another example to show how important but also challenging it is to design a valuable, successful reverse logistic service, namely carpets in the B2B market. In 1995 InterfaceFLOR, a carpet tile and commercial flooring company, launched mission zero, a promise to eliminate all of its negative environmental impacts by 2020.

For this company, waste is considered any cost that does not produce value to the customer, whether that's a process or scrap materials. Eliminating waste meant eliminating the concept of waste, not just incrementally reducing it. Recycling is seen as a last resort and only considered in cases where waste cannot be prevented or reused in any way.

The company recognized the need to influence and involve stakeholders. So they help customers reduce their impact on the environment by taking back carpets that have reached the end of their life and either reusing or recycling them. Since its launch in 1995 the scheme has prevented 91,000 tonnes of carpet tiles from going to landfill. The returned materials are reused, for instance to make carpet backing. The company also works together with special social enterprises to find a new home for the used carpets, making sure the flooring benefits those who really need it. Plus, they employ and train people in their community – so they make a difference in more ways than one. On average 60% of the used carpets are reused through the social ReUse partner network. As an absolute last resort, it will be turned into useful energy, through a waste-to-energy facility.

Engagement and experiences

Therefore, reverse logistic services are services that enable the return of used products and materials for recovery, reuse, repair, remanufacturing and/or recycling. Ample information on reverse logistics is available, for instance on process description, but not on services; let alone how to engage, involve and collaborate with the products' producers, sellers, deliverers and users, and much less on their ongoing commitment to optimise the service experience.

There is significant potential for adding value to product life cycles using reverse logistic services that involve stakeholders in their design processes. It's essential to take an integrated systems approach for the design of forward and reverse logistic services. With systems we mean all interrelated and interdependent actors and factors involved, such as stakeholders, (re)sources, processes, supply chain, business models, regulations, etc.

[1] http://bbia.org.uk/wp-content/uploads/2017/04/CAF26_52_SustainablePods-1.pdf ⌕
[2] https://www.theguardian.com/food/2020/jul/14/nespresso-coffee-capsule-pods-branding-clooney-nestle-recycling-environment ⌕

If we look at the carpet tiles examples, every day, tonnes of carpet are discarded mainly ending up in landfill – much of it not anywhere near the end of its working life. In the UK alone, it's estimated that about 165,000 tonnes of carpet end up in landfill each year. It costs less to send waste to landfill than it does to recycle it and throwing waste away is seen as the cheap and easy solution in many countries. In addition, there is no law holding manufacturers responsible for their end-of-life products.

This complex situation shouldn't hold us back to design a reverse logistic service for only one specific product. It might feel no more than a drop in the ocean, but the opposite is true. A successful service in one industry might not only challenge the whole industry, but also positively influence other industries. Just think about the sharing economy, with examples on ride sharing, home sharing, co-working and bike sharing. They're all based on the same, disruptive principle. So, do you want to make a difference? Would you like to design a service that will close the loop? Then continue reading!

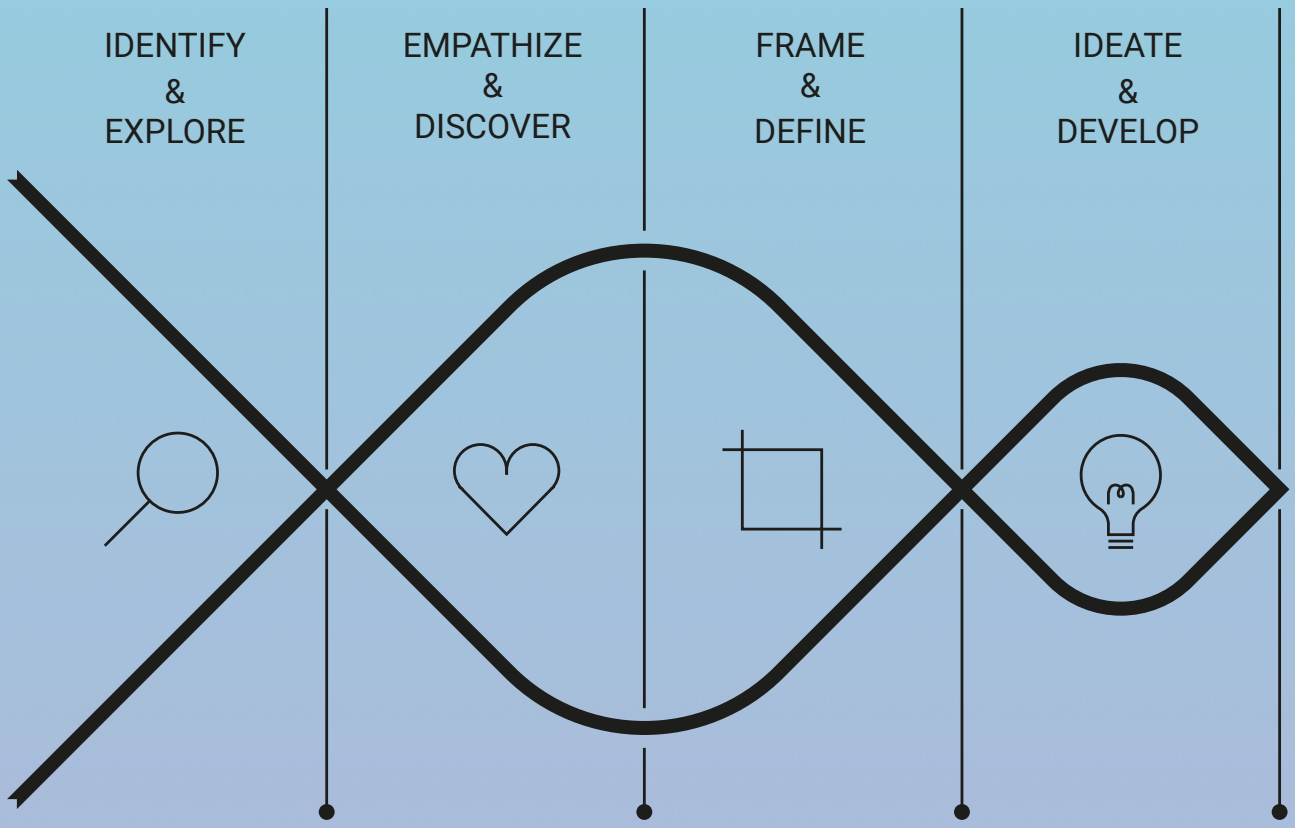
How can we improve the end-of-life cycle by actively involving users?

Human-centered design is the foundation of the student service design challenge. This a creative approach to problem solving that involves real people right from the start and places them at the heart of the design process. By collaborating with the people you're trying to reach, you can innovate with them rather than for them. Empathizing with them allows you to develop a clear understanding of their problems, goals, needs, thinking, emotions and behavior. When designing from this perspective you will more likely end up at new, unexpected and effective solutions to design problems that have a lasting impact and that have the capacity to really improve people's lives.

Another big part of the challenge is designing for circularity and its principles of eliminating waste or pollution, keeping products and materials in use and regenerating natural systems. This implies a systems based approach to design. Essentially this means that you should look for how products, people, activities and issues relate with one another and how they are interconnected. Circular design transforms the traditional models of supply and demand by taking into account the entire life cycle and multiple use phases of goods. In the circular economy, you are not designing for a single customer or user at the end of a value chain, but rather for a range of different people positioned within value networks. This intensifies the relationship between suppliers and consumers and creates new responsibilities. Often involving new business models or different modes of ownership. In order to manage that complexity, you need to constantly zoom in and out; paying attention to both the overall impact of all combined interactions as well as to the value of the individual experiences.

To facilitate this way of working the Student Service Design Challenge is based on design frameworks such as 'co-create by Philips Design', 'the double diamond', 'design thinking' and 'Enterprise Design Thinking by IBM', and is structured around three main rounds; 'Empathize & Discover', 'Frame & Define' and 'Ideate & Develop', following an initial 'Proposal' round. Each of these rounds has clear objectives and introduces specific tools and techniques that allow you to successfully move on to the next. Every round ends with a submission that needs to be handed in and uploaded for assessment.

In the **Challenge toolbox** you'll find a selection of tools, methods and worksheets to help you on your way. The tools were selected to build on one-another, whereby the outcomes from one worksheet could provide the input for the next. Most of the tools are widely applicable but it will be your own responsibility as a team to assess their usefulness for your specific project. The last tool of each round however, deserves extra attention and should usually be worked out and handed in for the assessments. Keep in mind that **these are tools not templates**. They can help you organize your process and progress



Secondary research	Define audience	Share stories	Get visual
Preparatory research	Multiple use-cycles	Find themes	Top five
Linear vs Circular	Stakeholder map	Insight statement	Ideation cards
Circular thinking	User research	How might we?	Service Flip
Primary research	Cultural probes	Needs statement	Concept selection
Expert interview	Journey Map		Paper prototyping
Find opportunities	Experience Flow		Design scenarios
System map			Co-creation
Problem Statement			Experience prototype

your work but the goal is to use them critically. Always think about how they can help you in relation to your own specific requirements. So instead of simply filling them out, adapt them where necessary.

1. PROPOSAL (IDENTIFY & EXPLORE)

The goal of this round is to explore the topic of 'reverse logistics', to identify potential opportunities and to write a detailed design proposal. Start by doing secondary research to learn about the principles of circular design. Practice distinguishing between linear and circular systems, understand forward- and reverse logistics and reflect on the role of users in circular systems. Use the Internet, newspapers, magazines and journals to collect inspiration and triggering ideas. Then dive into your local context, and find a reverse- logistics-related issue by researching people and their behavior. Pay attention to information about your own geographical location and its specific technological, economical and cultural dependencies. If possible, use primary research methods and techniques to confirm the urgency of the issue you like to solve. You can also talk to local experts to gain more insight. Get the facts and figures you need to understand the objectives of the problem. Try to map any circular opportunities within your own local context. Try to identify existing (local) systems that currently don't work to close the loop and that you could improve through designing a new or better service. Starting points could be to look at specific products (or certain product types or product groups) but also consider manufacturing or manufacturers, (unnecessary) waste streams and/or waste collection, recycling infrastructure and re-use initiatives, or even individual people and companies. Remember that the most interesting problems are most likely interconnected and require a systems based approach. Therefore, don't simply pick a product or product type at random, but carefully consider where there is potential to create an impact in the wider system. To do this, create a system map around your problem area that shows how the important products, artefacts, processes, stakeholders, etc. are connected and make sure to highlight any issues and opportunities. Clearly frame what problem you are looking to solve and the impact you hope to have. Compile everything into a problem statement. Include any evidence or background information that is necessary to understand the problem you've identified. Make it visual by including illustrations, photos or videos.

At the end of this round all submissions will be reviewed by the coaching team and a selection of max. 20 groups will be able to go to the next round.

Tools
- Secondary research
- Preparatory research
- Linear vs Circular
- Circular Thinking activation pack
- Primary research
- Expert Interview
- Circular Opportunities
- Product Journey Mapping
- Frame your design challenge

Submission
- Video (max. 5 min.) introducing the team and the problem statement.
- PDF document (A4, max. 4 pages, English) containing problem statement. Including systems map and any visual research / background material.
- PDF hero-image (A4, English) clearly framing the problem statement.

2. EMPATHIZE & DISCOVER

The goal of this round is to dive deeply into the problem you are trying to solve by becoming immersed in the lives of the people involved. When designing reverse logistic services you're not designing for a single customer or user, but for a range of people in the extended value chain. In order to design valuable solutions you'll need to discover all the stakeholders and learn to empathize with them. This means being able to see the world through the eyes of anyone who might have a role in the final solution, as a service user, as a service provider, as a manufacturer, etc.; anyone who might be

touched by your proposed solution. Aim to better understand their behaviour and their motivations and how these may be influenced by environmental, social, economic, organizational and regulatory factors. You can apply methods for doing ethnographic research like observing and interviewing or designing 'cultural probes' to identify peoples' needs, values, aspirations and challenges. What are their hopes and dreams? What gets in their way? Do their values align with your proposal? Can you find a middle ground somewhere? The resulting information and insights should be clustered in an experience flow, user journey map or relational map.

Tools
- Define your audience
- Understand everyone involved
- Multiple use-cycles exploration
- Stakeholder mapping
- Ethnography Fieldguide
- Cultural Probes (Gaver, Dunne, Pacenti)
- Probes context mapping
- User Journey Map
- As-is scenario map
- Experience Flow

Submission
- Video (max. 5 min.) demonstrating ethnographic research, insights and relational maps.
- PDF document (A4, max. 6 pages, English) containing insights, experience flow and journey- or relational maps / background material.

3. FRAME & DEFINE

This step is about synthesizing the information from the discovery phase and reviewing your progress in relation to your proposal from round one. Framing is a crucial step before moving on to creating ideas as it reveals new solutions and opportunities. By sharing inspiring stories together, the goal is to identify the gaps, challenges and patterns in the maps of the current situation. Translate these into themes. Based on the themes we can then envision and speculate about possible desired futures by asking 'what if' or 'how might we' questions. The objective is to re-write your design proposal by creating a more focused challenge- or needs statement.

Tools
- Share inspiring stories
- Find Themes
- Create Insight Statements
- How might we?
- Needs statement

Submission
- Video (max. 5 min.) demonstrating the overlapping themes, what if questions, and opportunity statement.
- PDF document (A4, max. 4 pages, English) containing themes and opportunity statement.
- PDF hero-image (A4, English) showing what if / opportunity statement.

4. IDEATE & DEVELOP

This is your final round! Now everything should come together.

After framing the problem, you can begin to think of solutions about how you can achieve what you have set out to do. The aim here is to diverge before converging. First try and get as many ideas as possible out of your head and onto (virtual) paper. Draw, sculpt and/or create collages to help visualize your ideas. Optionally you can use aids such as ideation cards to help create a long list of ideas. Next, start narrowing down the long list to a short list. To help you narrow down the list, assess the concepts against the principles of circularity and plot your concepts on a matrix to measure their difficulty to implement against how much impact they could have. Finally move from a handful of ideas into a fully-fledged concept that you'll refine. Develop scenarios and storyboards to push forward how the concept

would be used. Also think about what parts of the concept you can quickly test out by rough prototyping them as props or as functional models. Invite the people you are designing for to give feedback. Improve the concept and prototypes through iteration and compile the best ideas into an experience prototype for a minimum viable product or service (MVP/MVS). Explain your service concept (process, experience, etc.) with the use of a service blueprint and - if possible - as a working prototype or MVS. Document the user experience in a video.

Tools
- Get Visual
- Top Five
- Ideation cards
- Service flip
- Concept selection
- Paper prototyping
- Design Scenarios
- Co-create session
- Experience prototyping
- Storyboard
- Service blueprint
- Business model canvas

Submission
- Video overview (max. 10 min.) of the process start to finish. Introducing the team, users, insights and problem definition to reveal the final concept, scenarios and service prototype.
- PDF document (A4, max. 4 pages, English) containing 50 word concept description, design scenarios and necessary background information.
- PDF document (A4, 1 page, English) containing a worked out service blueprint
- PDF document (A4, 1 page, English) containing a worked out business model canvas.
- PDF hero-image (A3, 300dpi, English) showcasing / explaining the final concept. More detailed instructions and/or a format will be provided.

Please note that even though this 4 step process sounds very linear in reality it often isn't. It is important to fail early, learn fast and iterate. There's no need to discard good ideas simply because you haven't reached the 'Ideate and Develop' round yet, and likewise don't stop observing your users because the 'Empathize & Discover' round is over. Keep checking your hypotheses and try to adopt new insights quickly. Change your approach if necessary. Practice making and reflecting in parallel. Make as often as you can and use it to give form to your insights and ideas. Iterate as fast as you can to come to a solid understanding quickly.

Video submission tips
You'll have noticed that video is an important part of the submission process. Films that highlight insights and the design process are of great value to the jury, coaches and others.

IMPORTANT: Make sure to capture the lives and stories of the people you are designing for, the problem and the process of solving it. Each round has specific requirements and focal points for the film but combined they should provide a clear documented overview of the project. The final film should introduce your team, the users, insights and a problem definition before revealing the final concept. Make sure to use appropriate credits. Although slightly different in scope Fixperts-films can provide a welcome source of inspiration.

It's probably a good idea to make one team member responsible for documentation, this way you can more easily ensure consistent quality throughout. You can get creative editing the film by including text overlays, music (only use rights free music), sound effects and animations, for example.

If you don't have access to film editing or animation software or you don't know how to operate them, an alternative could be to use powerpoint or keynote to make playable slideshows with optional voice-overs.

Coaching and judging
The coaching team consists of a challenge coach and team coaches. The challenge coach will virtually meet with each team every other week to support the teams individually during the discovery phase (round 2), define phase (round 3) and development phase (round 4) of the challenge. Each team will also be guided by a team coach, an IBM design strategist and practitioner. The team coaches will guide the teams on a regular basis, including a main 'assessment session' at the end of rounds 1, 2 and 3. During coaching meetings you will present the work that has been done and the coach will give feedback and provide help on specific areas. Prior to the coaching meetings the challenge coach will send out group invitations that allow you to schedule a suitable time slot. Team coaches may be in touch directly.

At the end of round 4, each design team will submit their concept. All submissions will go through to a first round of judging by the challenge jury. The jury will carefully review, discuss and validate each submission based on the challenge criteria. There will be a selection of six nominees ('Shortlist') from which the winners will be selected. The challenge jury is composed of renowned design experts from various fields – related to human-centered (service) design, circular design, and design-led innovation.

Assessment areas
Submissions will be assessed based on each of six areas:

1. People centric
   The idea is based on real people's contexts, their needs and habits. The solution you design works for real people, and has a positive influence on their behaviour.

2. Experience based
   Your idea provides an impactful, rewarding and lasting user experience by offering an engaging solution that creates an emotional and sensory connection with the users.

3. Society oriented
   Your idea sees into the inclusive conception of design in which overlooked users, groups or communities, are taken into account to create positive change in society.

4. Technology enabled
   Your idea is data-driven and future-ready for the ever-changing digital landscape, moving beyond the obvious, existing technology.

5. Circular & sustainable
   Your idea supports sustainable innovation by 'closing the loop' thinking, and favouring ethical behaviour as well as empowering users..

6. Business viable
   Your idea is based on a service-centered business model, able to launch as a viable service business and value proposition as well as scalable.

Key dates
Round 1, Research proposal and design brief
- Brief available: Monday December 28, 2020
- You will have until Friday January 29, 2021 to submit your research proposal.

Round 2, Empathize and discover
- Start: Monday February 15
- You will have until Friday March 19 to submit your video and document.

Round 3, Frame and define
- Start: Monday March 22
- You will have until Friday April 9 to submit your video and documents.

Round 4, Ideate and develop
- Start: Monday April 12
- You will have until Friday May 28 to submit your video overview and documents.

Round 5, Jury voting and winner announcement
- The Jury Voting takes place between May 31 - June 11
- Winners will be notified on Friday June 11.

Partner information
This is a challenge initiated and sponsored by Philips Experience Design and co-organized with SERVICE DESIGN DAYS, in partnership with IBM and the Ellen MacArthur Foundation.

Philips Experience Design brings human-centered innovation to the technologies we all rely on for healthcare and healthy living. The products, services and solutions we design, touch the lives of millions every day and are recognized for excellence within the industry.

SERVICE DESIGN DAYS is a cross-disciplinary platform for change makers, influencers, and decision makers of small and large organizations, involved in product and service innovation, organization transformation, and value creation through design.

IBM has always served as a medium between mankind and machine, blending science, service and society to pave a path towards progress.

The Ellen MacArthur Foundation works to inspire a generation to re-think, re-design and build a positive future circular economy. The Foundation works with business, government and academia to build a framework for an economy that is restorative and regenerative by design.

People and planet
We would like to encourage you to take a people- and planet-centered approach. For this we have added two more websites to inspire you:
- Circular Design Guide
- Planet Centric Toolkit

If you like to, join the Circular Design Guide LinkedIn community. Share your project, ask questions and exchange.