The PTZ camera in a circular economy

Design for circularity means that a product needs to be developed for both reuse and repair, and to be made of recyclable materials. It is one solution on how to achieve sustainable development in the world. Circular economy is built on the principle of avoiding the creation of waste and the ability of looping back the product into the economy.

Circular economy is one solution to tackle the creation of waste in the world. If a product should fit into a circular economy, it must be designed with this intention from the start. This means that designers need to include design for circularity in the product development.

During the project, a design process called double diamond was used. A process that gave the researchers a lot of time to really understand the problem. When designing for circularity, there are different aspects to consider. This project focused on the aspects of *reduce*, *repair*, *reuse* and *recycle*. It was discovered that many trade-offs occur when considering all four aspects simultaneously. For example, designing for *reduce* by having less material in a product can conflict with design for *reuse*, since a product that will be reused needs to be very durable and therefore may require more material. However, it was also discovered that some aspects may lead to synergies and that some choices benefit circularity in many aspects.

The project resulted in a concept that revolved around some key functions.

- Materials should be kept as clean as possible in order to ease the recycling process. Meaning that materials should not be mixed.

- The product should be easy to enter and repair, but also easy to put back together.

- By having a modular system for the internal components, it is easier to upgrade and repair the product.

- Grouping components that are hard to recycle together and try not connect them with other materials.

The project has explored how to create a concept for a circular economy and what aspects need to be considered whilst doing so. These design strategies can help engineers and product developers create products in more sustainable ways, and allow for a product to be looped back into the economy again and again without creating waste.

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