

# Compost table – participatory design towards sustainability

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**This paper describes the participatory design methods used to produce a design with an aim of creating an emotional investment for the users. The designers in the project were the users themselves with facilitators guiding them throughout the five phases of the project; contextual inquiry, future workshop, low-fi prototyping, hi-fi prototyping and evaluation. Participatory design plays a great role in order to create and deliver a product that reflects the needs of a user. With a persuasive design in mind we argue for the importance of creating a deeper connection between a design and user. The paper shows how an artefact is capable of achieving the desired behaviour if associated with emotions, in this his case, to recycle and to bring a user closer to nature and therefore motivating a fusion with the environment.**

*Participatory Design; persuasive design; sustainable innovation; recycling; behaviour change*

## 1. INTRODUCTION

In this paper we go through the process of exploring and designing an artefact that motivates people to make a change, not by guilt but through two of the most characteristic traits possessed by humans - curiosity and empathy. These qualities of human beings will be used as an asset to make sure the sustainable design will not only stay as an artefact but a continually growing path towards a behaviour change – a sustainable routine that guides the user better than an artefact ever could.

## 2. DESIGN CHALLENGES

The project was conducted using methods of **participatory design**. By working with users there was an opportunity to include **sense-making** (Russel 1993) and situational awareness to be able to improve the interaction between people and information technology. The design was influenced by **persuasive design** (Fogg 2009) for creating a long term change in the users' lives. The goal of the project was to engage people who do not recycle. A main policy was not to work towards an artefact that uses guilt or normative messages to activate users (Lockton et al. 2008) but to take advantage of a forhuman's natural curiosity and nurturing abilities.

### 2.1 Users

The user group consisted of 14 participants and 5 designers of mixed genders aged 20-35. There were two requirements the users needed to fulfil; basic understanding of environmental issues and a desire to counteract the effects of environmental damage.

### 2.2 Method

The project was conducted through five phases as described in Greenbaum and Kyng (1991); contextual inquiry, future workshop, low-fi prototyping, hi-fi prototyping and evaluation.

The contextual inquiry was conducted in the participants' home-setting in order to ensure an everyday and natural setting. The future workshop was operated through three phases; critique, fantasy, and implementation. The participants used **brainstorming** as a technique to collect ideas, and then writing down their thoughts. These were later grouped into main themes.

The low-fi prototyping was performed using paper and pen. The participants worked both individually and in a group, prototyping their own solutions to the given scenarios.

During the high-fi prototyping phase, the participants were asked to prototype their view of sustainability in the future. All the ideas were then

combined into two different design proposals. Using **within-subjects design** (Shuttleworth 2009) the participants then evaluated the designs and critiqued the designs, leaving one as a frontrunner. The winning design was altered according to the critique and then evaluated a second time by the group of participants.

### 2.3 Design Process

The designers were present during the whole design process but did not take part in any of the decisions of the participants. The designers acted as facilitators, remaining neutral towards the participants while steering towards the focus of the project

The main findings of this phase were related to the participants' attitudes of environmental thinking. There was commonly mentioned a lack of understanding why someone should recycle, except for it being "good for the planet". None of the participants seemed to be able to conceptualise the process of waste and what happens after it gets picked up by the refuse collector

### 3. RESULTS AND FINAL DESIGN

As a result of the participatory design project, the participants proposed a design of a table with a built-in compost mechanism (figure 1,2). The table characterises the fusion between nature and an individual's sustainable lifestyle where recycling becomes an innovative activity instead of a compulsive must. The artefact serves as a table with a built in cylinder that permits composting food waste. In time, this waste turns into soil that allows plants and flowers to grow inside the glass surface. Seeing your waste turn into life revolutionises the concept of recycling and creates a nurturing relationship between an individual and nature.

The goal of the future workshop was to get answers to questions like: Can recycling in some way bring value to the participants' life? The findings of the future workshop led the project to focus on an artefact that could conceptualise how something, as unattractive as food waste, could turn into something meaningful and engaging for the user. The fantasy and implementation phases came through with the idea of a glass table with built in compost. Using persuasive design, the table is not supposed to handle all of our food waste but a tokenistic part of it, perhaps starting a trigger to an interest for making more environmental friendly decisions.

The prototyping phases targeted **the look and feel** aspects of the design (Houde et al. 1997). Through the prototyping workshops, the concept was further defined with focus on making the artefact attractive.



Figure 1: Hi-fi design –compost table



Figure 2: Hi-fi design –compost table

### 4. CONCLUSIONS

Urban development is a contemporary issue since over half the world's population live in cities. Building smart cities involve both public but also individual contributions in order to ensure a healthy and engaging city.

This paper suggests a new way of bringing nature into urban spaces. Giving people a live everyday example of how much life their waste still contains. This will give them an understanding of recycling on a deeper level.

In design, increasing ability is not about lecturing users for improvement. Instead, in order to increase the user's ability, designers of persuasive experiences must make the behaviour easier to do (Fogg 2009). People tend to find behaviours simple if they become routine. In seeking simplicity, people will often stick to their routine (Fogg 2009). In order to change recycling behaviour, a preferred change is not to decrease individual's food waste, but to help them to take a step towards developing a new routine that could then spread changing individual's global footprint.

Design is not meant to end when an artefact is complete, but to keep growing and evolving, slowly becoming part of users' everyday life and changing their behaviour towards a sustainable lifestyle.

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