Envisioning transitions

A design process for Healthcare and Wellbeing

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Abstract

This paper introduces a design research approach, Envisioning Transitions, based on a case study of a strategic design research project called Connected Care that took place at Philips Design in 2006. The project aim was to create design solutions for people in the healthcare and wellbeing domain. One of the main challenges in healthcare and wellbeing today is the increasing emergence of chronic diseases that are triggered by people's unhealthy lifestyle patterns. Creating empowering solutions for people to tackle the obstacles in lifestyle change requires in-depth understanding of socio-cultural trends, multiple stakeholders' insights, and detailed clinical professional information over time. Envisioning Transitions enables breaking down the core elements of the transition experience from a socio-cultural level to a design level across all relevant disciplines. It helps multidisciplinary teams to deliver meaningful system solutions from research insights.

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Challenges in designing for health and wellbeing

Due to the rise of chronic and lifestyle diseases in our societies, healthcare solutions need to be shifted beyond problem oriented 'one-off' solutions towards integrated systems which can empower people to change their lifestyle. This new need is driven by socio-cultural changes as well as healthcare trends such as an aging society, less physical activities and new nutrition behaviours due to more convenient lifestyles, an increase of stress, and decrease of sleep quality. The demand for self-care increases with an emphasis on enabling people to change their lifestyle over time to prevent lifestyle diseases in their own environmental context, like at home, rather than in clinics with specialists.

Design can be a powerful tool to develop such solutions because it translates people's needs into meaningful solutions with appropriate technologies. However, this requires a holistic approach in which designers need to work with multiple disciplines. In the design field there is a growing awareness and consensus that co-creation and integrated system solutions are needed, but the challenge remains how to achieve this [1, 2 & 3]. How can we manage multidisciplinary teams with different backgrounds, 'languages', and different professional focus? How can we keep such a team on track in non-linear processes? How can we translate findings from people research into design and communicate that the design solution is based on research instead of just saying that it is 'research based'? In order to tackle those design and process challenges along with socio-cultural changes, we developed the design approach, Envisioning Transitions.

Approach

When designing solutions for people in health-related transitions, we need to understand their needs and issues over time. Changing lifestyle while improving health may seem straightforward in principle, but making it happen is certainly not easy from both the user and designers' perspectives. People who are willing to change their lifestyle can be supported throughout the different stages of change: from getting started, making adjustments for themselves, and ritualizing to sustain changes. For those different stages, an integrated system which supports motivation, promotes education, and helps to create appropriate experiences, is required.

Envisioning Transitions enables us to break down the core elements of transition from a socio-cultural level to a design level across all relevant disciples. The method also allows us to take a clear position to set the innovation and design direction. By making this iterative process visible and insightful, the multidisciplinary team can understand the people's insights and work on the focus areas as a common ground. The method can be used to:

1. Translate research insights without losing the richness;
2. Support and guide design iterations;
3. Create a common vision and design language shared by different disciplines and enable a collaborative integration to find solutions.

Core Thinking

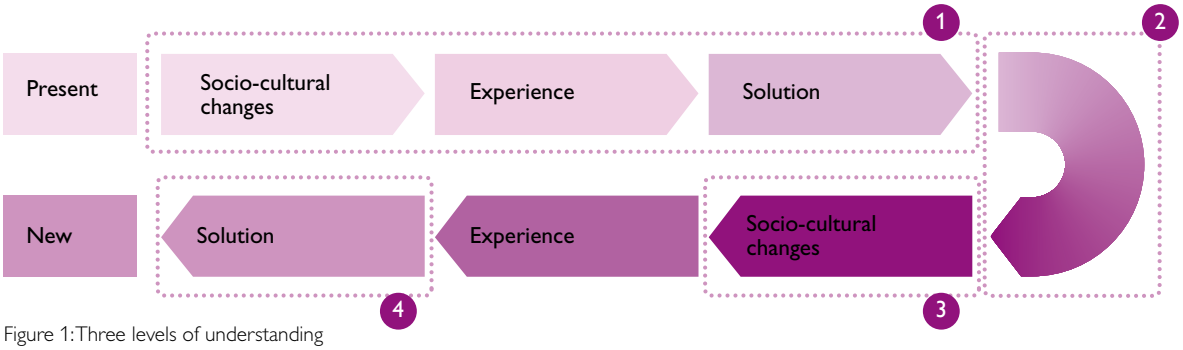


Figure 1: Three levels of understanding

In order to create appropriate solutions, it is key to understand the current situation, the possible areas of improvements, and ways to make those improvements. This design method aims to understand the broad context of people's lifestyle and bring people-centred solutions by understanding the present and envisioning preferred situations on three levels (Figure 1) [7]:

- Solution: What products and services are/will be available?
- Experience: How do those solutions play a role in people's lives?
- Socio-cultural changes: What social, technological, economic changes could impact on the situations?

This approach to study existing and new solutions is based on the High Design Process of Philips Design [8] and the ViP approach of Paul Hekkert and Mathijs van Dijk [4]. The High Design Process allows different disciplines (Figure 2) to design experiences and products around the user in their daily context by integrating socio-cultural research into the Design Process.

ViP allows designers to intuitively reflect not only on current solutions and interaction patterns but also on long term trends and developments that they see around them and find of importance for their project. The ViP method is developed for designers operating alone without any other discipline or user involvements. Their opinions become the main input rather than people's needs or research facts. As described earlier, for healthcare solutions, a multidisciplinary team with stakeholder research, and professional information are required. Within Philips Design, it is common to work in multidisciplinary teams; Envisioning Transitions is developed to enable better communication, translation and integration of research insights in an interdisciplinary way [7].

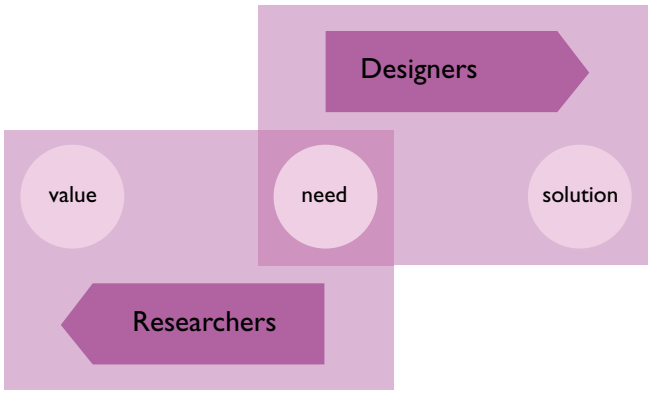


Figure 2: Multidisciplinary teams at Philips Design

Case study: Connected Care

Envisioning Transitions was used in a strategic design project at Philips Design in collaboration with several research and technology partners within Philips, called Connected Care, 2006. Connected Care presented a vision of personal healthcare that addressed a spectrum from preventative care and adoption of healthier lifestyle to chronic disease management. The developed concepts illustrated how various body-driven devices and services could empower people to overcome obstacles in their lifestyle changes [6]. The steps of the design procedure, Envisioning Transitions, are (see Figure 1):

Step 1: Understanding current situation
This initial research step looks for insights in people's daily life over time, relationships and activities of different stakeholders and developments in care. These are communicated through well-known methods such as Personas. In Figure 3, as an example of the process, the changes from two perspectives are illustrated: conditions and attitudes of people over time and the attitude and motivation towards their healthcare shifts, as condition of health changes.

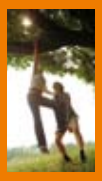
Step 2: Envisioning the characteristics of a preferred situation
After gathering information of the present situation, the next step is to envision how final design solutions should help to change people's lives. In this phase, the translation of research insights into design begins. In Figure 3 is indicated how the life of users would be optimized with our design solutions with simple graphics, extra lines (in pink) that represent the new, preferred situation.

Step 3: Describe the different areas of improvement
This step is to highlight the gaps between current (Step 1) and preferred situations (Step 2). In those gaps are people's needs for improvement as well as opportunities for new solutions (touch points). The gaps are highlighted as focus areas for design solutions for the case study. We then explained the characteristics of the lifestyle changes for each specific phase.

Step 4: Communicate the envisioned experience within multidisciplinary teams
(Part 4 in Figure 3) In the case study, to communicate the 'experience' within the focal areas (touch points), we created catchphrases in combination with intriguing images. The created vision with catchphrases and images works not only to share a common ground within a team but also to communicate outside of the team how the solutions were developed (Part 4 in Figure 3).

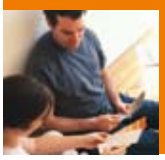
Figure 3: Envisioning Transitions, from understanding the current situations to envisioning preferred situations. This diagram shows the steps to translate the vision into design languages and a preferred experience.

Fit between what objects should provide and what users need:



Pushing their back
why: to make people realize that they need to continue the exercise
how: by analysing the history of exercises, eating habits, and their body changes, make users noticed small, subtle changes and also suggest other ways of doing exercises and eating habits.
how: active invitation

Stimulation
why: to refresh their mind-set for their goal and exercise programs.
how: By providing information how other people, who are in the same situation, are doing, and exchanging tips and results of some exercises
how: indicating that you are using the Philips product and willing to exchange information with others) it also becomes encouragements.



Evolvement in time/situations
why: to provide appropriate information to the current situations.
how: analyzing the exercise and nutrition history and provide alternative ways of doing exercises and eating habits – via internet?)

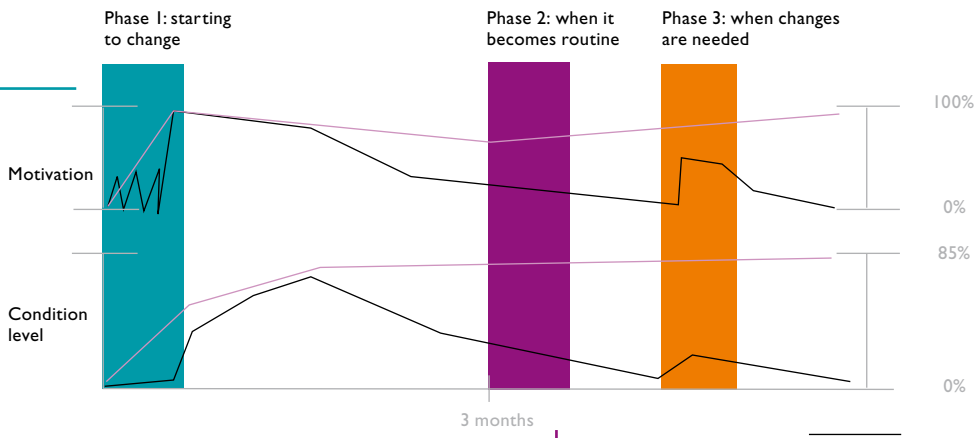
Changes in the life style:

Users;
Tried exercises but could not get satisfied results.
Rearranging priority.
Lost interests and needs change.

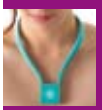
Changes in the life style:

Users;
Noticed that they need to take care of themselves better (when? Shopping clothes, groceries, using stairs, running to catch trains? – good triggers)
Learning how to exercise, how they are going to change, how to set priority and maintain the routine.

TakeCare



Fit between what objects should provide and what users need:



Comfort
why: to be with it all the time
how: being emerged into their life styles, making a part of daily routine.
how: making it wearable.

Positive Addiction
why: to make people continue the exercise
how: indicating how they have changed and will be able to change with supporting data such as history of the exercise, change of capability and current performance.

Fresh Vision
why: to refresh their exercise routines.
how: getting information how other people, who are in the same situation, are doing, and to exchange tips and results of some exercises.
how: indicating that you are using the Philips product and willing to exchange information with others via internet and at sites such as sports GYM, and while jogging.

Changes in the life style:

Users;
Gap between how they are doing and how they should do exercises.
Already arranged their routine in their life style.
Rearranging priority.
Open up for how others are doing.
Improved health condition so far.
Lost interests and needs change.

Refining and translating vision into Design

Based on the Experience Vision, which is created in Step 4, the design team started refining and manifesting the vision through various design processes, such as body storming and the creation of a scenario (Figure 4). This is done for example, in order to bring the catchphrase "Sneaky Trigger" from the experience vision into a design solution that helps to provide an easy start to lifestyle change and one that is merged into everyday activities for improving daily routines.

A part of the vision for the design solution was providing a portable device, within an integrated system that measures daily activities and stress levels and communicates the data in motivational ways to encourage users to experiment and apply healthier habits. Based on the vision, we created scenarios to study how the solution can be integrated into people's lifestyles.

The created vision allowed us to go back to users in early stages and show the concepts, goals and experience to test if we are on the right track (Figure 5). The researchers could provide feedback to the designers during the process as a part of design-enrichment loops.

Figure 5: Enrichment loops with user

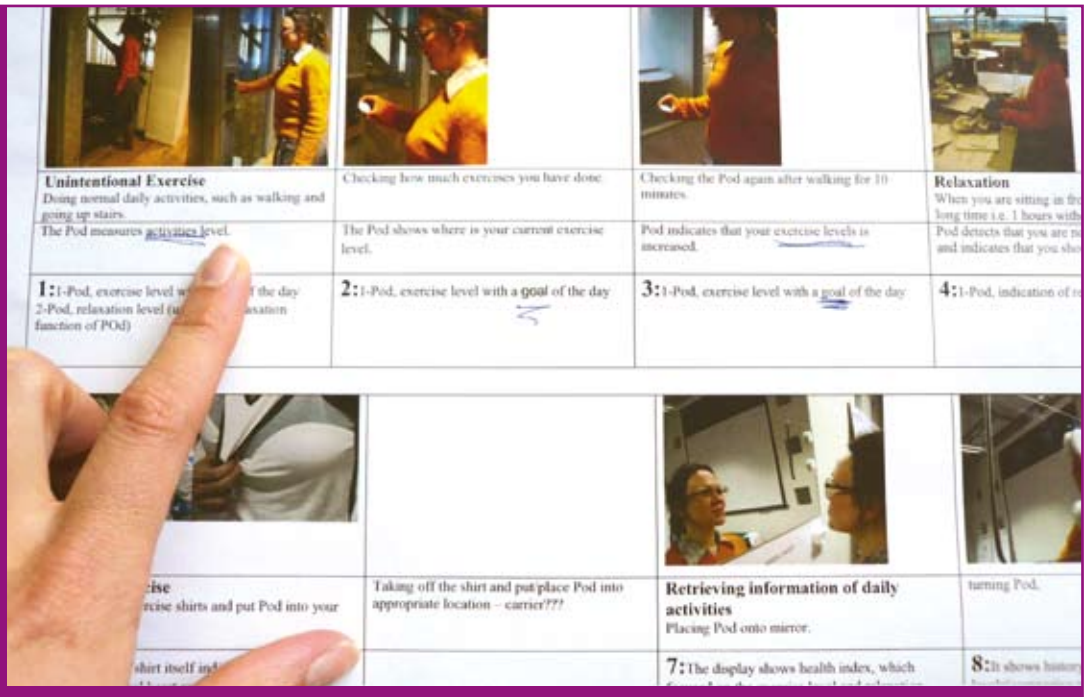


Figure 4: Tool to refine and translate the vision step by step.

Figure 6: snapshots of Connected Care system and communication material: website, portable measuring device, scenario movie, exhibition with live demos, and brochure (from left to right)

To communicate the vision to the outside world, we created and showed working demonstrators on an exhibition as well as a movie and brochures. In all of these occasions we used the same catchphrases and experience characteristics from Envisioning Transition. In this way it explained how the concept helps people over time. We could also demonstrate that the qualities of system behaviours and aesthetics of the solutions are based on stakeholder research.

Experience snapshots

When the pod of the Take Care concept is connected to a sports shirt, with integrated on-body sensors measuring heart rate and respiration, it can coach people and provide accurate information about condition. Back home, the data can be viewed on an interactive bathroom mirror. Users can see their long-term goals at a glance and see how far they are in achieving them. Feedback can be in the form of a growing flower representing daily achievements. Every new leave is like a reward for the small steps taken, helping the user stay motivated. Because the system as such is part of daily routine, it is easier to integrate new habits into daily life.

Figure 7: Take Care pod

Conclusions

The process of creating solutions for healthcare and wellbeing becomes very complicated because professional information and in-depth user insights are required. The design process, Envisioning Transitions, helps to consolidate the key findings from people research, which stimulate creative processes and communicate those rich factors within a multidisciplinary team in order to carry out user-centred design solutions.

Within the Envisioning Transitions procedure, creating a clear preferred situation worked as an integrated view of findings and insights across all levels. Then, the process allowed an alignment of the whole team and created common ground within the team.

The working demonstrators and the scripts that were developed explained how the solutions can influence people's wellbeing, based on research and delivered through the right experience.

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