
Clover: A preliminary concept of the (co-) design toolkit for the vital work-life scenario

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Abstract

In this paper, we present “CLOVER” a preliminary concept of the co-creation toolkit to create digital interventions for work-well-being (working well and being well) scenarios that combines design and technical approaches. Especially for reducing the knowledge worker’s sedentary behavior and increasing proper physical activities. Each technique is carefully specified, and it is supposed to be implemented in a macro contextual concern of customer experience as transformed by computational experiences (CX)[1]. The “C” to care about the most these days is Computation because it is profoundly impacting Commerce, Culture, and Community[1].

Author Keywords

Clover; generative techniques; design tools

CSS Concepts

- **Human-centered computing~Human computer interaction (HCI);**

Introduction

Whether we like it or not, our living world is being transformed by technology. Although the working technology like “Distribution Work” brings flexible options for knowledge workers at anytime/anyplace computing, on the other hand, it also breaks the

classic boundary between work and life. The knowledge worker relies heavily on mental activities rather than physical activities, which leads to a loss of negatively affects a person's vitality is the lack of physical activity (PA) and high levels of sedentary behavior (SB) throughout the day. We currently spend up to 71% of our working hours sitting [2], and trend analysis indicates that sedentary behavior will continue to increase in the near future [3]. Looking at the workforce in 2030 shows that it is likely to be roughly three-fourths are the young generation (Millennial + Generation Z) [4]. There come to some prolonged work styles especially for these young generation knowledge workers. For example "996 working hour system"[5] - working from 9 am to 9 pm six days a week. Our findings show that current technologies support interventions on physical activity promotion are mainly focus on after work contexts, so we try to build a (co-)design toolkit especially for the work-well-being scenarios during work time at the workplace.

Literature Review

Since this is a topic involving human-technology relations, we start the literature review with an overview of studies in the philosophy of technology up to the empirical and practical turn. Afterward, the "post-phenomenological" approach with the Mediation theory[6] from Peter-Paul Verbeek was selected as a good interpretation and basis of the framework for our toolkit design. Its central idea is that technologies when they are used, help to shape the relations between human beings and the world.

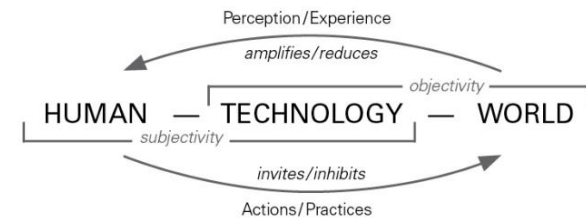


Figure 1: Technological mediation (based on Verbeek's descriptions)

The Mediation theory offers a general structured account of human-technology relations in order to bring the fore how technologies mediate human perceptions of the world and actions in the world (figure 1). However, for diverse design topics, it still misses specific R&D techniques as practical support. So we combine Hekkert's Vision in Product Design method(Vip)[7] which is a more practical implementation of theories like Verbeek's into a model intended to be helpful in the design process. Vip method asks the designer to come up with a future scenario (define the future context of the world based on your topic-related study) of the relationship between the user and the product (technology), and then use that vision as the basis for the design, especially it has proved techniques to support interaction design that linking actions/practices and perceptions/experience together, which gives practical support on design techniques under mediation theory's framework.

Proposed Toolkit

Although several design digital inventions for working efficient or digital wellness/well-being [8][9][10] have been proposed on the market, there is still missing a

practical method that integrates them (working well and being well) together with an ethical and practical design approach. According to our literature review, multiple prior theories have been integrated jointly into the formulation of the proposed framework. The “Clover” design approach (see figure 2) is conceived by two basic phases, the first one is “contextual research phase” and the second one is “future context design phase”. We use context mapping techniques[11] in the research phase to gain insights from both macro (commerce, community, culture) and micro (working well and being well) context study, and a well defined future context would be the kick-off point of the design phase. In the design phase, we transfer a series of hands-on design toolkit from Vip, ask the developers to come up with a future context vision of the relationship between the user and the product, and then use that vision as the basis for vital facility design.

The Flows of Design Steps

Based on the main steps of Vip design method, we composed four steps focusing on 1) learning the work-well-being context, 2) envisioning the future (vital/healthy) context, 3) linking design and CX, 4) brainstorming about solutions.

Step 1: learning the work-life context. There would be a self-designed sensitizing tool which use context-mapping technique to learn the target group’s work-well-being context and gain “insights” to discover the preferred futures of vital living at workplace.

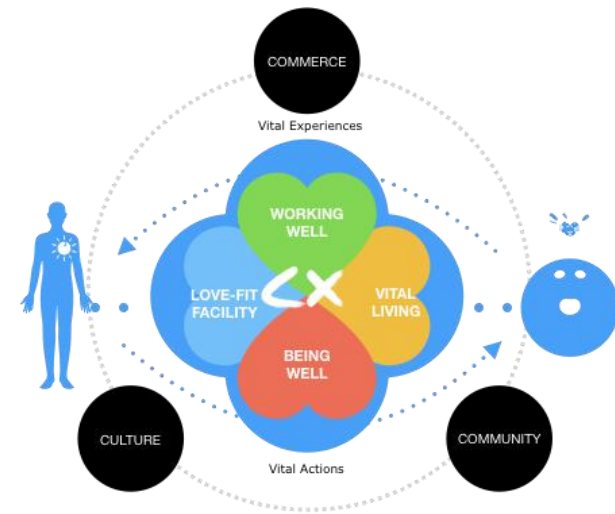


Figure 2: the preliminary framework of Clover toolkit

Step 2: envisioning the future (vital/healthy) context. Establishing a context goal of the vital living future based on the findings from step 1. Create a statement with an illustration that reflects the vital living vision (describing the goal of the creation).

. Step 3: linking Interaction design and CX definition. The design group would develop vital action concepts that can promote, facilitate, and enhance vital living experiences based on the context goal from step 2.

. Step 4: brainstorming about solutions. In this step, we encourage the developers to generate ideas of digital inventions that can facilitate (love-fit[12]) vital activities and fulfill the goal of the vital experience.

Conclusions

This paper presents a proposed toolkit “Clover” and explored how it can be used as a practical design toolkit for vital work-life design. It provides a systemic vision, which would help developers to explore the preferred vital living contexts at the workplace. Although this preliminary concept of the toolkit requires further design practice to be verified, this initial study is promising. “Clover” could be an inspiring toolkit for designers to build an empathetic understanding of the intended consumer’s context and to make effective designs for shaping their behavior and experiences.

References

- [1] John Maeda. CX Report. Retrieved July 6, 2020 from <https://cx.report/>
- [2] Clemes, S.; O’connell, S.; Edwardson, C. Office workers’ objectively measured sedentary behavior and physical activity during and outside working hours. *J. Occup. Environ. Med.* 2014, 56, 298–303. [PubMed]
- [3] Kohl, H.W.; Craig, C.L.; Lambert, E.V.; Inoue, S.; Alkandari, J.R.; Leetongin, G.; Kahlmeier, S.; Andersen, L.B.; Bauman, A.E.; Blair, S.N.; et al. The pandemic of physical inactivity: Global action for public health. *Lancet* 2012, 380, 294–305.
- [4] Anita Lettink. No, Millennials will NOT be 75% of the Workforce in 2025 (or ever)! (Published on September 17, 2019). Retrieved July 6, 2020 from <https://www.linkedin.com/pulse/millennials-75-workforce-2025-ever-anita-lettink/> Kohl, H.W.; Craig, C.L.; Lambert, E.V.;
- [5] Li Yuan “China’s Grueling Formula for Success: 9-9-6”. *The Wall Street Journal*. Archived from the original on 2019-03-31. Retrieved 2019-03-31.
- [6] Peter-Paul Verbeek. 2005. *What Things Do: Philosophical Reflections on Technology, Agency, and Design*. Penn State Press.
- [7] Hekkert P, Van Dijk M. Designing from context: Foundations and applications of the ViP approach[C]//*Designing in Context: Proceedings of Design Thinking Research Symposium*. 2001, 5: 383-394
- [8] Apple watch series 5. Proactive Health Monitor Always in sight. Always insightful. Retrieved July 17, 2020 from <https://www.apple.com/apple-watch-series-5/health/>
- [9] Digital Wellbeing. Find a balance with technology that feels right for you. Retrieved July 17, 2020 from <https://wellbeing.google/>
- [10] Microsoft and Steelcase Partnership. Exploring the Future of Work. Retrieved July 17, 2020 from <https://www.steelcase.com/microsoft-steelcase/>
- [11] Visser F S, Stappers P J, Van der Lugt R, et al. Contextmapping: experiences from practice[J]. *CoDesign*, 2005, 1(2): 119-149.
- [12] John Maeda, *How to Speak Machine: Laws of Design for a Digital Age*, 128, 131