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# A Perspective On Digital Wellbeing

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## ABSTRACT

Technology is all around us, supporting and distracting us at the same time. In this work we present our perspective on the definition of digital wellbeing and how to achieve it. For digital wellbeing approaches, we define two categories *creative* and *corrective* and discuss relevant, exemplary user resources like time, trust or social skills. Finally we give a short outlook on the challenging future - is marrying a virtual popstar a form of digital wellbeing?

## CCS CONCEPTS

• **Human-centered computing** → HCI theory, concepts and models.

## KEYWORDS

Digital Wellbeing, HCE, HCI

## INTRODUCTION

Nowadays, technological devices are permanent companions to most of us. We continuously interact with more or less intelligent applications and devices like streaming platforms, wearables and above all smartphones. While most of our technology aims to improve our lives, enabling or optimizing tasks, excessive and above all unnecessary usage bears the risk of dependencies and addiction. Recently,

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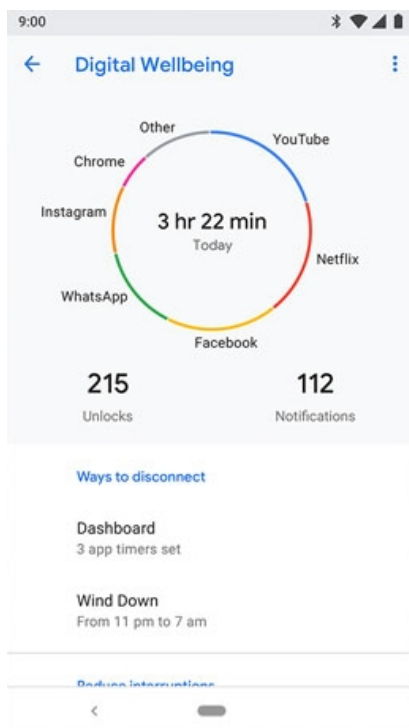
even companies like Google or Apple, which business is to attract people to use their technology, provide applications for digital wellbeing - helping the user to 'switch off'. In this paper, we present a perspective on the definition and composition of digital wellbeing before discussing some specific user features.

### AN IDEA OF DIGITAL WELLBEING

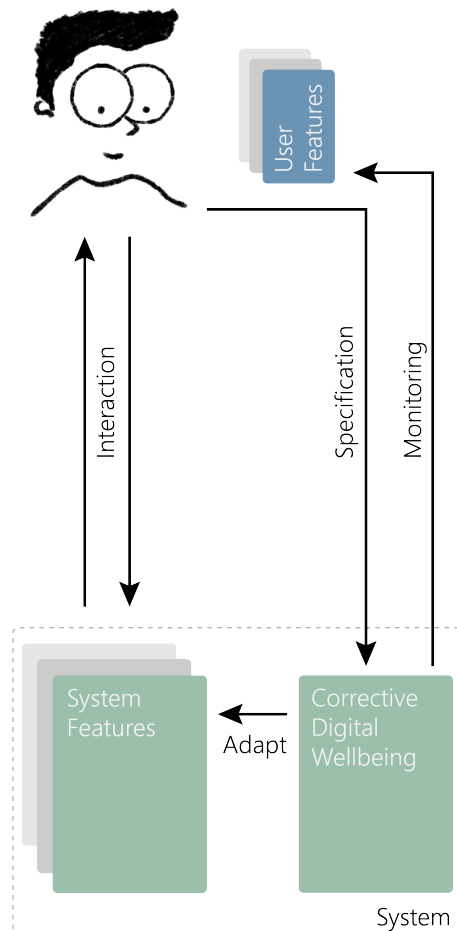
The general term *wellbeing* in dictionaries is described as the state of being comfortable, healthy, or happy. Dodge et al. [3] offer a deeper view on the psychological definition, describing wellbeing as the 'balance point between an individual's resource pool and the challenges faced' [3]. In an earlier work, Felce and Perry [4] propose that physical-, material-, social- and emotional wellbeing together with development and activity may define *quality of life*. Adapting the initial dictionary definition, digital wellbeing could be seen as 'feeling comfortable when using specific technology'. In current approaches, digital wellbeing is often connected to time of usage. Google's app for digital wellbeing (see Fig. 1) provides various features that should help to reduce spent time and distraction through the smartphone [6]. In a similar way, Apple allows to manage and limit screen time [1].

*User Features.* In our opinion, besides usage time, digital wellbeing should take other user resources like trust or social skills into account. Determining a user's state and demands leads to the field of *user modeling* [2], where user features are determined to adapt and personalize applications. The previously mentioned approaches for digital wellbeing track for example user behavior through usage time. Other user features like knowledge, skills, goals, interests or personal traits may be tracked similarly - either using implicit or explicit input. While usage time or also health features are relatively simple to capture, a user's mental, emotional state and features like trust are rather complex to determine. However, for example in terms of mental, emotional user modeling, the currently growing field of *affective computing* offers approaches for implicit feature determination [8]. So for example measuring a user's affective state during interaction could - similar to usage time - be used to define thresholds for wellbeing and trigger notifications or system adaptations. Modeling social skills and behavior could be achieved by combining measurable data like location or number of calls with explicit user input like rating elapsed social events.

*Correct and Create.* Fig. 2 visualizes the process of determining user features to adapt system features in order to support a user's wellbeing. An exemplary adaptation is Google's Wind Down feature: at defined times, the smartphone interfaces is reduced to grayscale making it less attractive to use and serving as a reminder to reduce usage. Another example is the limitation of access to certain applications based on usage time. While these adaptations aim towards limiting interaction with certain system features, another approach is to initially design system features in a manner to support wellbeing. We therefore categorize approaches for digital wellbeing into two categories,



**Figure 1: Google's digital wellbeing application: visualizing spent time and offering functionalities to reduce usage time [6].**



**Figure 2: Corrective digital wellbeing: monitoring user features (e.g. available time) to adapt system features (e.g. application access) according to manual or automated specifications.**

*creative* and *corrective*. An example for creative digital wellbeing are information that help to generate transparency and trust, like showing access rights before a mobile app installation. Also, activity and health apps in general could be put in this category. We suggest that research in the field of digital wellbeing should 1) focus on measuring wellbeing, 2) use corrective approaches to improve existing systems and evaluate measurement methods, and 3) in the long run focus on creative approaches.

### ACHIEVING DIGITAL WELLBEING

In this section, we discuss some specific examples of user features related to digital wellbeing.

*Time.* A user's time is an important resource and therefore a main target of current approaches (see Fig. 1). Providing usage time overview, recommending breaks, limiting access time to certain system features are corrective approaches to increase a user's awareness and keep this resource in balance. In our opinion it would be even more helpful to not only show usage time of an application, but also assist the user in questioning the benefits of it: why do you want to use this feature? Does it fulfill your expectations? Is it worth your time? If a feature is considered useful but time-wasting, maybe that would be an indicator for developers to overthink its implementation.

*Trust.* Another important user resource is trust. With increasing integration of automated, intelligent systems, there already are approaches to improve systems in terms of transparency, data privacy and explainability [5]. In addition, not only trust into the functionality of a system, but also trust into provided information is important. We propose to increase research efforts regarding information presentation to the user. Technology should not only provide access to a broad amount of information, but also in some way enable the user to easily identify sources, truthfulness, context and present diverging opinions.

*Social skills.* Social networks and messengers allow social communication on an indirect, impersonal level, influencing the user's social skills like face-to-face communication. Again, in our opinion it would be useful to somehow visualize the influence of technology on a user's social behavior. So for example the number of phone calls or even personal face-to-face contacts could be tracked (e.g. via geo location or calendar entries) and presented to the user - similar to Google's or Apple's screen time managing (see Fig. 1). Following a more persuasive approach, instant messaging apps could suggest the user to make video calls or meet in person, when a lack of direct communication is recognized. Furthermore, new communication features should be explored with the goal to keep both, technological benefits and social skills. An approach in this direction is to add a physiological or emotional layer to digital communication (see for example [7]).

*Health.* Physiological health in general can be seen as another user feature. In terms of monitoring and managing user health, various devices exist. Fitness wristbands and smartwatches allow to

frequently monitor health features and may increase physical wellbeing by providing motivation through activity and workout tracking. In this context, we propose to increase research on how to individually adjust interaction, in order to keep balance between motivation and paternalism.

## CONCLUSION AND OUTLOOK

The influence of technology on our lives is growing day by day. Depending on the point of view, technological dependency could point the way to a bright or a dystopic future. Facts like a Japanese man, marrying and living together with a virtual pop star [9] may give a hint on what to expect in the next decades. In this paper we argued that ‘real’ social skills are an endangered feature, worth preserving. However, when defining wellbeing as ‘feeling comfortable and happy’, we may have to critically rethink our definition of digital wellbeing in future. Addictive drugs also may increase wellbeing, yet usually have strong negative effects on important features like physical or mental health. When future technological applications lack these effects or if negative effects like decreasing social skills are not rated that important anymore, future digital wellbeing may be completely different defined as today. Finally we want to mention, that in this paper we viewed digital wellbeing mostly from an individual perspective. However, especially for future development, we think it is important to also take collective wellbeing regarding family, social groups or society as a whole into account.

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