
Designing for Digital Wellbeing and its Challenges in Everyday Life

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BACKGROUND

As a precursor to this position piece, we highlight that our research has stemmed from a sustainability background, focusing on 1) the environmental impact of digital devices and data demand in everyday life, and 2) the role of ICT in transforming parcel delivery work for more sustainable configurations.

Data Demand Intertwined with Digital Wellbeing

With rising demand for data and the associated energy from the underlying Internet infrastructure, it is expected that ICT will form 21% of our global electricity use by 2030 [1]. This is in part due to the unsustainable 'Cornucopian paradigm': demand for data pushes for increased supply through Internet infrastructure expansion, which in turn encourages innovation of services that encourage demand and so on [10]. Our approach to this issue has involved investigating device and Internet use to find ways in which HCI may intervene to stunt data demand growth [11]. Yet, our most recent study has not only pointed to ways in which we can meet our research agenda, but has also uncovered different affects technology has on users. One of these is wellbeing; we believe addressing digital wellbeing is beneficial both for the users themselves as well as the environment.

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The Impact of Digital Technology on 21st Century Workers

Digital technology is becoming further ingrained in work-life as we shift towards a more on-demand economy reliant on an army of gig-economy and on-demand workers, who rely on technology (e.g. smartphones, PDAs) and gig platforms to provide them with access to work and communication with their employer. There are an increasing number of devices and services that workers rely upon (e.g. knowledge economy, gig-economy, creative services) [3]. Digital work platforms are impacting workers through increasing levels of stress, low levels of pay, working unsocial and irregular hours, overwork, sleep deprivation and exhaustion [12]. Entangled in an already digitally saturated workday is research that calls for an increased role of digital tools to help workers manage their workloads more efficiently, increase flexibility, and become more effective at work [4].

DESIGNING DIGITAL WELLBEING

Digital wellbeing: a positive feeling associated with the use of technology, striven by maintaining a balance between our 'real' and 'online' lives. We suggest this definition as the word 'wellbeing' is associated with happiness, and the 'digital' part links to our relationship with technology. The second half of the definition highlights that digital wellbeing does not exist without appreciating life off the screen; maintaining this balance is what will make technology *useful for us*, instead of it *consuming us*.

Designing digital wellbeing is a highly complex agenda for the HCI community, primarily due to the subjective nature of personal wellbeing. Everyone is different, our reactions to technology are different, and we maintain our wellbeing in unique ways which work for us. HCI researchers and practitioners need to promote digital wellbeing in a variety of ways that work for the user. In sustainability, there are two types of research agendas for the design of technology: sustainability *through* design, and sustainability *in* design [8]. We believe these two agendas translate to digital wellbeing design.

Digital wellbeing *through* design

Designing digital wellbeing *through* design relates to the use of technology to promote wellbeing. For example, Apple's new features to iOS help users manage their screen time through providing analytics of their device use [2]. This provides users with the information they need, but it is still up to the user what they then do with that information. Other examples in this category could also involve blocking applications (e.g. Forest¹); technology is available to help users who are aware of the negative affects of device use on their wellbeing, and wish to gain more control over their devices.

Digital wellbeing *in* design

This relates to incorporating wellbeing in the design of digital products and services. For example, video-autoplay has been seen to be a time-hog for our study participants, as well as having implications

¹<https://www.forestapp.cc/>

for binge-watching [6] and parent-child relationships [7]. Removing the auto-playing of videos from service design would promote digital wellbeing without the user being involved in the process. Another example includes “microboundaries”: “*a small obstacle prior to an interaction that prevents us rushing from one context to another*” [5]—i.e. designs for digital wellbeing that are *embedded* within technology.

CHALLENGES OF DIGITAL WELLBEING

The Limitations of Digital Wellbeing

Considering the subjective nature of wellbeing and the fast-paced changing nature of technology, measuring how ‘happy’ we are in our relationship with technology is extremely challenging. How can we maintain and measure wellbeing across the many devices we own? How will time affect this, especially as the ‘novelty effect’ wears off? We believe it’s important to discuss at the workshop what technology *can not* achieve for digital wellbeing. For example, a recent project by Nokia was discussed at MobiUK² in 2018 which consisted of using wearable technology to measure how ‘happy’ we are through analysing our physical smiles. Can technology always be utilised for wellbeing, if they are part of the problem which affects our *digital* wellbeing?

²<http://mobiuk.org/>

Respecting the User

Our wellbeing can be a private issue, therefore respecting users is paramount. We must ensure digital wellbeing designs are conscious of the user, and provide the right balance of control throughout our everyday lives. Taking Apple iOS tools as an example [2], their ‘downtime’ feature, blocking access to applications, still allows users to deactivate the feature if they decide they need to access something. Therefore, if compelled enough to continuously access an application, ‘downtime’ could become useless for some users. How can we provide the right level of control to the user, and still promote their digital wellbeing through ‘controlling’ designs?

Contravening Current Device and Service Design

Designing for digital wellbeing can contravene the current designs of services and technologies. For example, why would Facebook want us to log out of the social media platform, if our activity on the site provides them money through advertising? Businesses need to become more responsible, which may require broader involvement from policy makers. Evaluating designs we create in HCI may also be difficult given operating system constraints, e.g. a study has been carried out to vibrate phones after a user has spent too long scrolling on Facebook [9]; this was carried out on Android, evaluating this on Apple products may be impossible unless the iPhones or iPads were jail-broken. Clear collaborations with businesses and stakeholders may be required in this field of HCI.

DIGITAL WELLBEING FUTURES

In the next 10-15 years, we believe that without effective intervention in HCI, the negative effects of technology on our digital wellbeing are going to become increasingly more difficult to address. We take this position due to the progressively ubiquitous nature of technology: the Internet of Things (IoT) in the home, city or workplace will be everywhere—digital devices will be at our every turn. We are looking forward to discussing this, alongside the challenges we discuss in this paper, with the community at the workshop to help scope the digital wellbeing agenda in HCI.

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