Redesigning Online Places for Consumer Wellbeing Using Unconventional Interaction Design Elements

JOSKAUDĖ PAKALKAITĖ

Falmouth University

ABSTRACT

My research focuses on developing and providing design solutions that promote digital wellbeing for consumers and mitigate noisy experiences within digital interfaces. In this project, *noise* is defined as the high volume of sense-stimulating activity (such as pop-up notifications). I explore the design challenges associated with noisy digital experiences such as attention recruitment, distractive and 'cold' generic interfaces, screen time overuse, touch-poor and mindless interactions. I provide solutions to how these challenges could be addressed by exploring three interactions elements of visual attention, mindfulness, and touch, and testing them by developing prototypes. This project also aims to raise awareness between consumers, IT and software developers, UI and UX designers of designing more ethical and mindful online places for users.

This practice-based project adapts a Research through Design approach and uses Design Fiction methods. In response to design challenges, I created three fictional prototypes and near-future scenarios. The prototypes that I will present during the session include a mindfulness intervention tool that tracks screen time called *Birds*; a fictional *Yoshi Phone* with a monochrome hand-drawn interface; and *Shapie*, a shape changing communication device. I will also present the user manuals and the narratives for each prototype.

The fictional narratives will then be distributed together with the diegetic prototypes and an online questionnaire to industry professionals such as UI and UX designers, software developers and engineers to gain feedback. The insights collected from the industry professionals will be analysed and presented as part of the results of this study. I predict and recommend that noisy digital experiences can be mitigated by implementing mindful elements, purposefully using colour and shapes, hand-drawn interfaces, and touch-rich interactions, when designing noise-free digital interfaces.

KEYWORDS

Practice-based research, research through design, design fiction, unconventional interaction design elements, noise-free digital interfaces, consumer wellbeing

Introduction

Unethically designed technologies are likely to captivate consumer attention but at the expense of their wellbeing; therefore, it is a challenge for designers to design ethical technologies which have the opposite effect (Harris 2016). In the context of designing digital interfaces, it is important to create aesthetically pleasing interfaces, but also with critical and ethical awareness (Stopher et al 2021). I also speculate whether unconventional design approaches such as development of hand-drawn interfaces, mindful and touch-rich interface interactions and using design fiction to develop these dimensions can address the design challenges related

to unethically designed technologies. In the sections below, I explore three interaction design elements separately: visual attention, mindfulness, and tactility, and the design challenges related to each element. I also provide proposals on how to tackle these challenges. I then present methods and briefly describe the process used to develop these dimensions. At the end of this paper, I outline the next steps.

Visual attention

Attention is one of the most studied subjects in cognitive psychology research (Kramer, Wiegmann and Kirlik 2007). In this context, attention is a cognitive and behavioural ability to process visual information (James 1890). This process includes selectively paying attention to specific details by ignoring and tuning out other information. Economist Herbert Simon speculated that information overload will consume human attention and attention will become a scarce resource (1971). The term 'Attention economy' (Simon 1971) was coined to describe the management of information, because it is based on a concept that attention is a scarce commodity, and even a currency. According to recent research, consumers have a limited visual processing (Bays and Husain 2008; Cowan 2010) to an extent where a product or visual stimuli is competing for their attention over others (Florack, Egger, and Hübner 2020). This prompts the question of what happens to consumers when they are exposed to too much information. Information fatigue syndrome was coined by psychologist David Lewis, who found that research participants, when inundated with data, made more errors while performing tasks, misunderstood communication, and became snappy with their colleagues (Murray 1998). In this context, information fatigue syndrome is defined as consumers' suffering from being bombarded by the enormous volumes of streaming data such as infinite social media posts, pop-up notifications and ads, which have no purpose, meaning, or value to the users. According to this study, users who are paying continuous attention to social networking platforms and are experiencing information and communication technology overload, are subject to fatigue, stress, psychological, and physical strain (Lee et al 2016). This concludes that information overload negatively affects attention by causing fatigue and damages the ability to process data, which also has a negative impact on consumer wellbeing.

'Time Spent Well' became the next significant tech debate in 2018. It was sparked by a viral presentation at Google, 'A Call to Minimize Distraction and Respect User's Attention' (Harris 2013). This movement influenced large information technology companies such as Facebook, Google, YouTube, Instagram, and Apple to incorporate 'Time Well Spent' like features. This also led to the co-founding of the Centre for Human Technology. CHT is a non-profit organisation which 'is dedicated to radically reimagining our digital infrastructure'. For example, their activities include activism such as testifying at the US Senate about the dangers of the use of persuasive technology on Internet platforms and supporting the development and release of the Netflix-documentary The Social Dilemma (2020), which explores the threats of social media for consumers. According to Case (2016), technology should not capture the user's attention unnecessarily or remain in the centre of the consumer's attention, but rather calmly exist in the user's periphery most of the time. This demonstrates that there is a major unresolved issue in the way current technologies, which are developed by large IT companies, are designed. This could be addressed by radically reimaging the interface, which would have a peripheral role in a consumer's life and should be designed with the effect on the user's attention in mind. However, a recent study outlines that there are 367 tools for digital wellbeing such as apps and browser extensions that help consumers to protect their attention from online distractions (Lyngs et al 2019). Some unconventional ones are even supported by large information technology companies such as Google. For example, an experimental digital wellbeing initiative, which was developed by Google Creative Lab, with open-source design interventions and experiments, allows designers to upload their own digital wellbeing interventions and users to test them. The features allow users to reflect on their digital habits and set digital wellbeing goals such as productivity, unplugging, minimizing distractions and creating healthy digital habits communally. This shows that there is potentially a market for unconventional digital

wellbeing tools that aim to minimize distractions, which potentially can be promoted and supported by large information technology companies. This also provides a validation for practice-based research.

Attention recruitment, distractive and cold 'generic' interfaces

As stated by Nir Eyal (2014), push notifications are designed to be addictive and distracting. He explains that habit-forming technologies and addictive apps are created by using the hook model. The hook model consists of four steps that influence the user's behavior to use the app: internal and external triggers, action, reward, and investment. In this scenario, the user might experience internal triggers such as boredom and fear of missing out and the push notification is designed to act as an external trigger for the user to act. The notification pops up on the screen and the user is hooked to enter the platform and check the notification on the app. The action is simple and leaves the user anticipating reward. According to Eyal (2014), the user is motivated to expect this because of the varying rewards that wait for the user on the app. The user can gain three types of rewards: rewards of the tribe, the hunt, and the self. They may temporarily fulfill the user but leave the user wanting more. The engagement and 'a bit of work' done by the user on the app are associated with the user's investment in continuing to return to the app. According to recent research, there are over 5 million apps combined on the Apple App Store and the Google Play Store (Statista 2020). Recent data from eMarketer also shows that the average smartphone user spends 90% of their mobile phone time on apps. From the point of a UX and UI designer, it could be argued that it is hard to design a digital application that stands out in this competitive product market and effectively engages with the consumers. I suggest developing apps without the habit-forming model would be an ethical approach, but possibly not successful in terms of consumer engagement because it would not 'hook' consumers to constantly use them. There is a need for more research in this area to investigate whether this challenge can be mitigated.

In addition to addictive and distractive notifications, another issue related to noisy digital interfaces is 'colour induced attentional recruitment'. Colours communicate the importance of the signal instead of detecting objects and are the first elements that grabs users' attention (Ramsøy 2017). If the user is exposed to lots of colour and contrast such as the iOS home screen of the device, apps, and notifications, the user is under a constant state of attentional recruitment. This research suggests that the underlying issue of the notification overload, app and device overuse is the colourful setup. I suggest that the use of colours and shapes are another important aspect when designing digital interfaces and that app developers use colour and shapes deliberately to 'grab' users' attention. In summary, the purposeful 'misuse' of the colours and shapes by app developers can cause addictive behaviour patterns and cognitive overload because colours impact users' emotions and behaviours. This indicates a need for redesigning the user interface for healthier use.

In addition to the issues of distracting interfaces that compete for the user's attention, there is an issue of generic 'cold' interfaces. In this context, 'cold' interfaces are the overuse of generic digital UI elements. Therefore, I refer to generic interfaces as 'cold'. Free UI kits, which are provided for designers and app developers by large IT companies such as Apple, Google, and Microsoft are very useful for effective and fast app prototyping. However, they seem to all share the same issue of genericness. This raises questions concerning the use of generic digital elements as standard, a norm that might negatively contribute to a 'cold' user experience. I suggest that warm hand-drawn interfaces can potentially mitigate noise withing digital interfaces. In this context, warm interfaces refer to hand-drawn UI elements. Padfield and Pakalkaitė (2019) explore whether hand-drawn digital interfaces could potentially be a better solution for the design of a digital application. These findings suggest that hand-drawn

interfaces, such as hand-drawn typefaces, icons, and interactive buttons, can provide a better and more emotionally engaging experience for users with mental health challenges. Recent research supports this hypothesis, with studies demonstrating how the viewing of artworks such as hand drawings enhances the wellbeing of adults with mental health conditions and exploring whether this concept could also be applied to the design of drawing elements for digital interfaces (Tomlinson et al 2018).

Proposal: Development of hand-drawn interfaces

According to Pakalkaitė (2021), hand-drawn digital interfaces constitute a new concern in UI and Human-Computer Interaction research. This research poses possibilities for hand-drawn digital interfaces to promote digital wellbeing largely by mitigating 'noise' in the digital interface, and potentially providing a more user-friendly and emotional experience for consumers more broadly. I think that the only way to generate new knowledge is to apply the concept of hand-drawn interfaces in practice by designing a prototype. Therefore, I propose to design a feature phone with a hand-drawn interface for this project. The interface design of this feature phone will have a monochrome colour palette, hand-drawn typeface, icons, buttons, and navigation system with modes to communicate a low-noise concept.

Mindfulness

According to Kabat-Zinn (2018), mindfulness is the ability to intentionally shift focus and attention to internal and external stimuli at the present moment. Mindfulness itself originates from ancient Buddhist teachings, but its principles and practice have been applied non-religiously to improve wellbeing in the Western world. A positive connection between emotional wellbeing and the practice of mindfulness has been established, as recent research suggests that mindfulness is greatly associated with an improved sense of wellbeing, enhanced attention, better decision-making, and even satisfaction with one's life and overall happiness (Brown and Ryan 2003). Mindfulness as a subject has been widely researched and applied successfully by academics in a comprehensive scope of scholarships from psychology and healthcare to design and art, and it has been even recognised officially as a separate field of science. The research around the positive impact of mindfulness has significantly increased since the 1990s and interest has been growing since. Nonetheless, the potential benefits of mindfulness should be critically analysed. Some researchers have argued that mindfulness meditation can have a negative impact because the practice of meditation can possibly distort one's view of oneself, evoke fits, and even cause depersonalisation disorder (Castillo 1990). However, the likelihood is that these outcomes would be found predominantly in people who already have severe mental health issues.

Mindfulness and Technology is an emerging design and research area that promotes bringing the user's self-awareness to the present moment instead of losing oneself in a technological device. It aims to create a balanced relationship with technology and encourages the mindful use of technology for consumers. Mindfulness also has emerged amongst the rising and future-shaping consumer trends, which promote wellness within the IT tools market (Well to Do Global 2018). Alternatively, Jeff Wilson (2016) points out that wellness and mindfulness have become 'a mechanism for selling products' for large corporations. The motives behind mindfulness as a rising trend within the wellness industry must be questioned and, so far, is under researched. Currently, mindfulness is already a fundamental factor in the successful intervention of addictive behaviour patterns, from mental health disorders to tech overuse, and in HCI in a very comprehensive range of fields: health, mental health, productivity, entertainment, lifestyle. Online mindfulness-based mobile applications as wellbeing interventions have

been effective in coping with information overload and self-regulating tech use. Alexis Hiniker (2017) conducted a study on how mindful use of media could be supported within families (parents and their children) and explored and tested this in terms of what methods would be the best to facilitate it. The findings of his study concluded that mindfulness was one of the most effective approaches for HCI (Human-Computer Interaction) behavioural interventions (Hiniker 2017). Therefore, recent research supports the argument that the use of mindful tech tools by consumers has important implications for emotional wellbeing and technologies that can effectively support emotional wellbeing and offer significant benefits to the consumers. This is why I suggest that mindfulness-based mobile and web applications could be introduced to track screen time to benefit users.

Screen time overuse and mindless interactions

Excessive screen time is associated with detrimental wellbeing, physical and mental health issues (Hale and Guan 2015). Recent research suggests that an average adult can spend up to 11 hours on a screen a day. According to health professionals, the recommended screen time limit is 1 hour for small children and 2 hours a day for older children and adults. This data suggests that adults overuse digital screens by up to five or six times the daily recommendation. Excessive screen time is also associated with the displacement hypothesis. It suggests that the use of digital screens replaces real-life activities which positively contribute to wellbeing. These findings should be considered carefully when designing digital interactions because of the potential risks to consumer wellbeing. Alternatively, moderate screen time might be posi- tively contributing to wellbeing because it enables and empowers users 'to pursue their goals, be more active, feel connected to others and enjoy life' (Przybylski and Weinstein, 2018). The researchers found that high levels of daily screen-time particularly on weekdays and extremely low (or no) daily screen time was linked to lower levels of wellbeing. Additionally, one-hour of smartphone use a day was associated with optimum wellbeing. In conclusion, this data suggests that the relationship between digital screen time and wellbeing is curvilinear, therefore, it supports Przybylski's and Weinstein's (2018) digital 'Goldilocks hypothesis'.

Another important research and design inquiry is whether digital wellbeing is much more than just reducing Screen Time (Lukoff 2019). The term digital wellbeing itself suggests that there are issues around balancing a relationship with technology in a digital world. Digital wellbeing has recently emerged as a new domain of research. According to Kirby et al. (2018), it is referred to as 'an extension of the concept of wellbeing centred around the use of the online and digital world'. Jisc (2019) establishes the term digital wellbeing further as 'the capacity to look after personal health, safety, relationships and work-life balance in digital settings'. Therefore, it could be argued that digital wellbeing is not limited to reducing screen time. Jisc proposes that fostering digital wellbeing could include designing IT tools that promote participation in social and community activities, negotiation, and conflict resolution; manage digital overload and distraction; assist users in maintaining a healthy lifestyle (personal health, fitness, diet, mental health), 'act safely and responsibly in digital environments and with concern for the human and natural environment when using digital tools' (Jisc 2019).

In this context, mindless interactions are defined as interacting with the digital device uninten- tionally and losing track of time, which leads to excessive screen time and overuse. The concept of 'scrolling fatigue' has been introduced to describe the negative effects of the phenomenon of infinite feed features on social platforms, which is associated with overuse. In this context, scrolling or swiping fatigue describes the endless options provided to the users by algorithms in apps such as those used for dating or viewing images. A swiping mechanism within a digital application works in combination with behavioural reinforcement psychology, where a user

is rewarded by the action of swiping and with 'matches' or attractive images. Such rewards increase swiping behaviour, producing maladaptive behaviour patterns (Fullwood et al 2017), which could potentially have a negative impact on consumer wellbeing.

Proposal: Development of mindful interactions

In this context, noise within digital interfaces are the digital experiences that allow users to use screen time excessively and mindlessly. Therefore, I speculate whether the application of mindfulness could be used when mitigating noise within digital interfaces. In this project, I propose to develop a mindful screen tracker. The timer would allow the user to set intentional screen time goals and to track these goals. Also, I suggest using low-noise, hand-drawn visual clues to communicate time to the users. This technology could be developed further as a digital application and/or used as a special mindfulness feature when developing a feature phone. This also provides validation for practice-based research.

Touch and tactility

One of the features that distinguishes humans from other animals are hands and tool-using behaviour. Humans have a somatosensory system which allows us to experience a wide range of sensations such as different temperatures, textures, vibrations, and much more. A sense of touch is controlled by a complex and enormous network of touch receptors and nerve endings in our skin. Human hands and fingers have an especially high density of those receptors and nerve endings; therefore, we can interpret and process encoded tactile information using them. The sense of touch allows us to master complex skills such as playing musical instruments, creating paintings, and performing medical procedures. Touch also plays a significant role in consumer wellbeing. Research suggests that humans have developed a daily 'need for touch' and a lack of fulfilment of tactile needs is associated with lesser wellbeing (Peck and Johnson 2003; Patrick et al 2007). Relatedly it has been established that children learn through sensory play, because touch and exposure to a wide multitude of textures help to develop language and motor skills, to experience and learn about the world (Minogue and Jones 2006). Diversity of type, scale, and material is crucially important to sensory learning, as its function is to produce diverse knowledge about physical relationships and mechanics in the world, in a variety of circumstances (Lederman and Klatzky 1987). As such, limiting interactions to two-dimensional surfaces may result in a decreased ability to recognize 3D objects in the future and overall haptic perception, as well as affecting other linked cognitive development (e.g., language). Touch deprivation is also related to the current COVID-19 pandemic. To decrease the viral spread of COVID-19, the population kept themselves safe by wearing personal protective equipment, self-isolating and social-distancing. There is a large amount of research which proves how this pandemic has negatively affected our wellbeing. It can be deduced that humans are 'creatures of touch' because we need tactile experiences for our overall wellbeing.

Touchscreen technology went mainstream and has become a new norm in our everyday lives since the development of smartphones and the release of Apple's iPhone. Our sense of touch allows us, using touchscreens, to complete simple tasks. According to these studies, tactile need unfulfillment is related to increased smartphone use, whereby consumers 'high in the need for touch may demonstrate an overuse of a smartphone's touch screen to satisfy this need' (Lee et al 2014; Elhai et al 2016). This suggests that the touchscreen has become 'a digital surrogate for human tactile need fulfilment' because touch deprivation and tactile unfulfillment negatively impact consumers' touchscreen overuse (Barrios-O'Neill and Pakalkaitė 2022). The use of touch and tactility are also used in designing effective interventions to improve wellbeing and solve design challenges such as touchscreen device overuse. One example is

the trend of designing feature phones such Mudita and Punkt Phones with tactile keyboards. Two of Mudita's Pure Kickstarter campaigns have already exceeded their goals to produce and distribute them. Another interesting application of tactility is in the feature phone Punkt MP01 which has simple, more tactile and grippy hardware that encourages the user to interact with the device via a tactile keyboard. The first edition of Punkt MP01 was so successful that they released the second edition Punkt MP02, but with additional features such as connection to the Internet. Punkt MP01 has a minimalistic user interface with no app icons which allows the user to take a break from being overwhelmed by hyperconnectivity to the digital world.

Touch-poor interactions

In this context, touch-poor interactions are ones which lack ergonomic and elastic design. Recent studies also show that holding and using a touchscreen device for too long causes injuries such as arm, neck, hand, shoulder, finger, and thumb tension, pain, and even inflammation (Kim et al 2016). Touchscreen technology overuse in children is related to weaker muscular development, inability to grasp and write with tools, poorer verbal communication, and language acquisition (Intolo 2019; Toh et al 2017). Beyond the repetitive mechanics of mindless interaction simply leading to overuse of body movements, there may also be underlying issues with ergonomic design, where devices are not optimally designed to align with human anatomy. For example, Fellowes company suggests that current computer controls are designed for a horizontal hand position, which is prone to injury, instead of a vertical hand position, which is a better solution for human anatomy.

Screens and their devices are generally static themselves, and lack elasticity, therefore it limits the way we interact with the device. The only movement is happening within the interface. The way users control devices have been adapted from the keyboard, mouse, hand controls, and interfaces of personal computer keyboards, without considering the ergonomic impact on the consumers. Glassy smoothness is the main texture used to create the screens of touchscreen devices, which are currently mass reproduced. General textures such as roughness, hardness, softness, flexibility, grippiness, etc. are not often incorporated in devices. Experimentation with more diverse textures, however, is not new in HCI research, including in academia and within small tech companies and design firms.

According to Danielle Barrios-O'Neill and Joskaudė Pakalkaitė (2022), touch-rich describes hardware interface design which is rich in tactile information, and they explore whether touch-rich interactions mitigate noise within digital interfaces. I speculate whether designing touch-rich interactions can play a major role, when developing noise-free digital interfaces and redesigning online spaces. Barrios-O'Neill and Pakalkaitė (2022) explore how to produce touch-rich experiences and proposes design considerations for texture, elasticity, gesturality, and interpolation. My focus is on elasticity and elastic design and how it can potentially mitigate noisy digital experiences in my doctoral project. Elasticity describes design concepts for interfaces able to convert or transform, can be deployed in multiple ways or flexibly, can be more organically shaped and asymmetric, can integrate with other surfaces or materials, and can be adapted for better ergonomic fit. Elastic design in this context refers to design concepts that open or disrupt rigidities in design aesthetics of leading devices, which tend to be rectangular, flat, unchanging, hard, and self-contained. Elasticity describes design concepts for interfaces able to convert or transform, can be deployed in multiple ways or flexibly, can be more organically shaped and asymmetric, can integrate with other surfaces or materials, and can be adapted for better ergonomic fit. Samsung Galaxy Z Flip and Fold3 smartphones are recent examples of elastic design because of their ability to be flipped and folded like a compact mirror and a book.

Proposal: Development of touch-rich interactions

In this project, I focus on developing touch-rich interactions in the form of a prototype that employs elastic features. I propose that designing a communication device that could have

abilities to change shape/have a shape-shifting interface could be an alternative to touchscreen devices. This also would be the first application of the touch-richness concept in practice, therefore, designing a prototype is necessary. This also provides validation for practice-based research.

Methods: Practice-based research

Practice-based research is an academic research approach which contains a practice element as part of the research project, often used in arts and design disciplines (Candy 2006). Whether practice-based research is a valid way of doing research instead of traditional research methods has been debated. In this context, I refer to traditional research as a written thesis. However, Bruce Archer (1995) proposed that in certain circumstances the only way to find out is to explore and test the concept via practice-based research. Since then, practice-based research has become a recognized and accepted form of research, supported by academics working on the development of the practice-based research theory field. According to Linda Candy (2006), practice-based research also can be used in a doctoral project to develop original claims and generate new knowledge which can be communicated through creative outcomes together with the supporting written description. She also highlights that the understanding of the significance and originality of a doctoral project, and the contribution of it to new knowledge can only be obtained through those creative outcomes (Candy 2006). In my opinion, the only way to develop noise-free digital interfaces is through practice-based research by exploring the propositions of whether noise within digital interfaces can be mitigated by mindful interactions, touch-rich interactions, and hand-drawn interfaces. I also propose that a complete understanding of the development of noise-free digital interfaces can only be demonstrated by developing these interfaces and by this, I am referring directly to the development of mindful interactions, touch-rich interactions, and hand-drawn interactions, along with a written element to the project. Therefore, I selected practice-based research because providing a written element without the practice element would be incomplete and fail to provide a full understanding.

Research Through Design

Research Through Design is a design-based research approach, which has frequently been used in academic environments as well as interaction design and HCI fields (Stappers and Giaccardi 2016). Research Through Design is also a recognized way of designing products and services as it focuses on the design of the artifact and its main elements as a way of generating and communicating new knowledge (Stappers and Giaccardi 2016). The main goal of my study is to develop design solutions (noise-free digital interfaces) to the problem (noisy digital interfaces), which suggests that my project needs to provide prototypes. I therefore chose the Research Through Design approach because the focus on designing prototypes aligned with the aims and objectives of my study. However, the Research Through Design approach is still in its formative stage meaning there are various models and practices within this approach (Stappers and Giaccardi 2016). For that reason, I must choose the most appropriate method for the project based on its unique set of design challenges and solutions. In my source review, I presented design challenges and proposals as well as explored how design fiction allows designers to design prototypes with ethical awareness. I also proposed using design fiction to develop noise-free digital interfaces as well as raise awareness, test ideas, and address any implications. Therefore, I selected the method of Design Fiction because it allows the designer to innovate alternative solutions as well as develop diegetic prototypes such as Yoshi Phone, Shapie, and Birds.

Design Fiction

Design fiction is a design research tool for creating ways to test, explore, and prototype future scenarios (Grand and Wiedmer 2010; Bleecker 2009). Expert-led design fiction as a service-based approach is used to critically explore possibilities of desirable futures within large tech companies (Pasman 2016). There are also several ways of creating design fiction. After reviewing these, I chose the methodology used in 'The Poetics of Design Fiction' (Markussen and Knutz 2014). The decision behind this choice was that the methodology in their study was adapted and performed from creative specialties such as photography, illustration, and design, which are the most relevant to this study. Also, this project is an example of how an illustrator can successfully produce a design fiction. They also used design challenges and proposals in their methodology which aligns with my source review. My methods include developing 'What if scenarios', diegetic prototypes, and fictional narratives.

Yoshi Phone

The 'What if scenario' for the Yoshi phone is 'What if a feature phone could have a hand-drawn interface?'. This scenario was then used to sketch and explore the look of the Yoshi Phone. 'Yoshi Phone' is the feature phone with a minimalistic hand-drawn user interface, which is gentle on users' attention (Figure 1). After the 3D prototype was designed and printed, the next stage was to develop the interface design for the feature phone. Instead of apps, the feature phone has modes based on activities/places associated with the tasks. The menu of this phone has different modes: Basics, Home, Work, Commute, Wellbeing, and Offline, which offer the user tasks most likely to be associated with the location. The Yoshi Phone has two views that users can select: Icon View and Non-Icon View. These views communicate low-noise digital interfaces. Non-Icon view provides a less distracting experience. Yoshi Phone also does not show time. The interface design for the Yoshi Phone has been hand-drawn and scanned in. The hand-drawn interface has been placed on the 3D prototype to simulate the way this fictional prototype works. The final prototype will also have stickers to simulate the screen interface. I also created a user manual to communicate how Yoshi Phone works.

Figure 1. Joskaudė Pakalkaitė. 2020. Yoshi Phone [manipulated photographs]
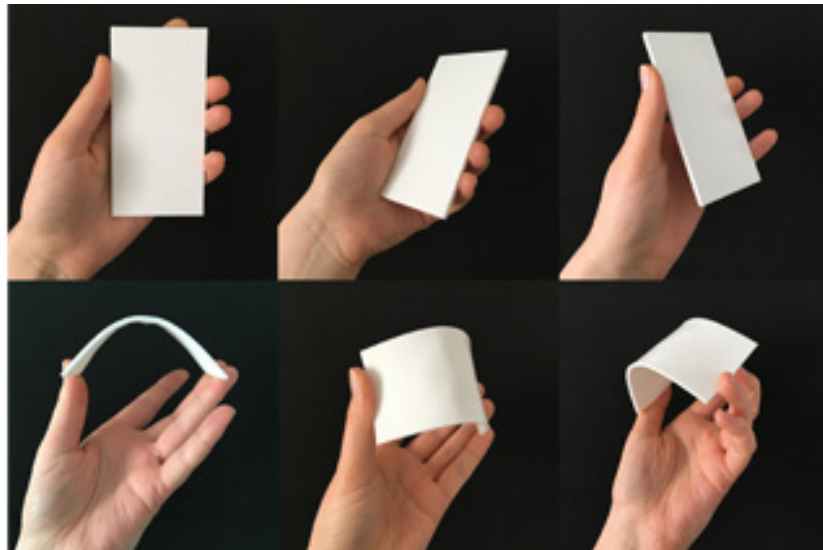
Figure 2. Joskaudė Pakalkaitė. 2020. Shapie 3D prototype [diegetic prototype]

Shapie

The 'What if scenario' for the Shapie is 'What if a communication device could change shape?'. This scenario was then used to sketch and explore the look of the Shapie. 'Shapie' is a touch-rich portable communication device that comes with elastic properties and abilities to change shape. I then designed Shapie and printed 3D prototypes. Shapie has six properties that make it stand out from other communication devices. Shapie has a thin body, it can stick and unstick from surfaces, become soft and hard again, be bent, change shape, and return to its original shape, be folded, and unfolded, when needed (see Figure 2). After the 3D prototype was designed and printed, the next stage was to develop the interface design for the feature phone. The interface design for the Shapie was hand-drawn and scanned in. The drawing was then edited on Adobe Photoshop. The hand-drawn interface was placed on the 3D prototype to simulate the way this fictional prototype works. The final prototype will also have stickers to simulate the screen interface. I also created a user manual to communicate how Shapie works.
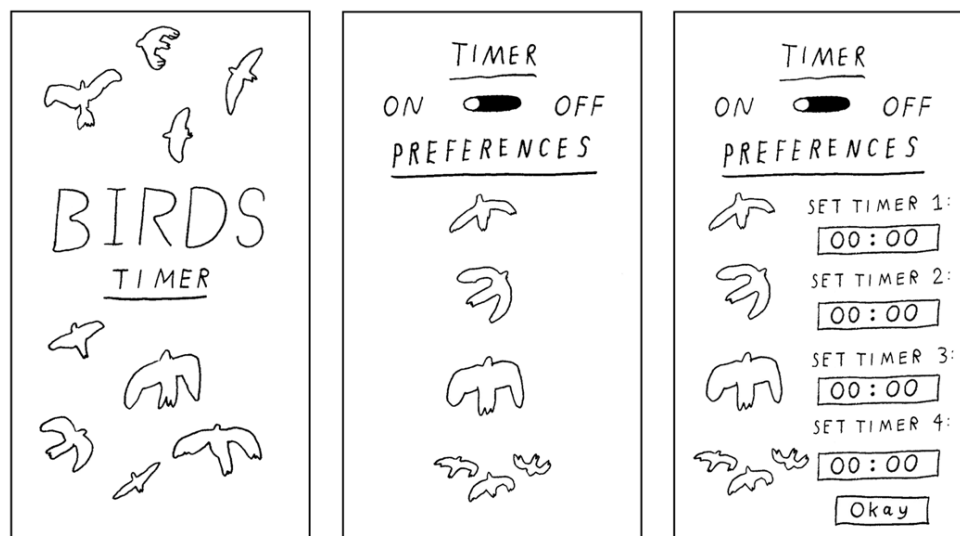

Figure 3. Joskaudė Pakalkaitė. 2020. Birds digital application [diegetic prototype]

Birds

The 'What if scenario' for the Birds app is 'What if images of birds could communicate overuse and interrupt overuse of the device?'. This scenario was then used to sketch and explore the look of the Birds app. 'Birds' is a mindful timer digital app, which allows users to set screen timers and be gently alerted to the set time limits of their digital sessions by the hand-drawn images of birds (Figure 3). The fictional app is designed as if it is available to download on the AppStore. Users can set up to four timers for their session to track and set intentional screen time use. The images of birds alert the user to remaining time online. Three timers gently remind you about remaining time, but after the fourth timer, the device shuts down. Users can set the timers, and switch timers on and off on the app. I also created a user manual to communicate how the Birds app works.

Conclusion and next steps

I predict that online spaces can be redesigned for consumer wellbeing by implementing mindful elements, purposefully using colour and shapes, hand-drawn interfaces, and touch-rich inter-actions. I also suggest that these unconventional design approaches can potentially stimulate and raise awareness of large IT companies to develop better IT tools. During the beginning of my project, I built relationships with UI, UX designers, hardware and software developers, and engineers, whom I approached to be the research participants. In the next stage, after the Design Fiction narratives by George Foster are illustrated, they will then be distributed together with the user manuals and a survey to industry experts to gain feedback. The insights collected from the industry professionals will be analysed and presented as part of the results of this study.

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Joskaudė Pakalkaitė, also known as **Yoshi**, is currently a fifth-year PhD student at the School of Communication Design, Falmouth University. She also works as Study Skills (Digital) Coordinator at University of Exeter. Her doctoral project was presented at Falmouth University and Royal College of Art as well as UEA Social sciences, MeCCSA2020, EVA London 2021, PGR MeCCSA2021 and EVA London 2022 conferences. The future directions of her research are the explorations of how Human-Computer Interactions and Storytelling influence people, their wellbeing and everyday environment. She is interested in how design can increase wellbeing for consumers and what kind of role design can play in future scenarios.

Email: j.pakalkaite@falmouth.ac.uk