Title: Is capitalism overtaking UX design and negatively impacting the user's mental wellbeing?

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Introduction

Design is a fundamental construct for society. All aspects of design impact people and our surroundings, from industrial to UX Design. Products physically alter our environments, perspectives on life, and how we think.

According to the Cambridge dictionary, UX design is “user experience: the experience of someone using a product, system, or service, for example, whether they find it enjoyable and easy to use” (Cambridge Dictionary, 22). This definition of UX design focuses on the overall user experience, which is heightened through ease of use and engagement. When these platforms become so persuasive through their content, do they take away from the user’s free will and change their perspective on life?

Alongside this UX design impacts mental wellbeing through the user’s experience of the online product, The definition of mental wellbeing is “the state of feeling healthy and happy” (Cambridge Dictionary, 22). The content of online products can alter the user’s mental well-being which will be investigated and discussed further throughout this dissertation.

A designer’s core purpose is to solve problems by creating suitable products; when companies become involved in the design process to make excessive capital through increased user engagement, are the designer's ethics and moral code disrupted and altered to get their salary? This leads to my dissertation question, ‘Is capitalism overtaking UX design and negatively impacting the user’s mental wellbeing?’

This platform of written work will focus on the consequences of the UX design field. As part of this investigation, I will examine the mental effects of these products and the ethical concerns surrounding the issue by investigating the following books – Ten arguments for

deleting your social media accounts right now (Jaron Lanier), Ruined by Design (Mike Monteiro) and Hooked (Nir Eyal) all produced by UX designers who have seen the implications of their work in the hands of multi-million-dollar companies. This will contribute to forming a cohesive understanding of how UX design affects people and our society through online products (platforms).

UX designers are making an impact on billions of users through the design of their products. These products can manipulate and alter the user's perspective through the algorithm, contents, and advertisements. It is argued by Mike Monteiro that "The world is on its way to ruin and it's happening by design." (Monteiro, 2019, p. 10) The theory of Ruined by Design explores how UX design contributes to society's destruction and the ethical implications that the tech industry is affecting society and politics.

My initial thoughts on UX design are that most online platforms were created to be fundamentally moral and ethical. Still, through the constant refinements of these platforms and the company's drive to generate more revenue, I suspect user engagement has heightened to such a point that it is affecting the user both mentally and physically. This is partially due to the design of these platforms and their consumers.

Chapter One: Engagement and UX Designers

Throughout this section, I will discuss three key points. The first area I will explore is the device that allows users to engage with online products created by UX designers. Next, I will consider users' typical engagement time with these devices. Finally, I will delve into the consequences that UX designers in the tech industry have identified.

“Something entirely new is happening in the world. Just in the last five or ten years, nearly everyone started to carry a little device called a smartphone” (Lanier, 2018, p. 5). Advancements in the smartphone industry have allowed users to engage with people worldwide via a range of different online platforms. These advancements have allowed users to immerse themselves further into the online world. Newer iterations of smartphones enable users to play games online, watch videos, and connect with others. Bankmycell.com reported that in November 2022, there were 6.648 billion phones currently being used, equivalent to 83.32% of the world population. (Bankmycell, 2022)

The demographic for smartphones is continuously growing, by identifying the cause of this demand, designers can adapt their products to what is needed. I believe that the success of the smartphone market is partly due to the nature of the product. Users are able to experience a continuous input-output stimulus, allowing them to disconnect from their immediate surroundings. This immersion is incredibly rewarding for the user.

Figure One, Iteration’s of smartphones (Nspirement, 2022)

Figure one depicts the design evolution of smartphones. The far left features the Nokia 2108, capable of playing offline games, messaging, and making phone calls. On the far right is the Xiaomi Redmi 6, which includes all the Nokia 2108 features, a much-advanced display screen, camera, user interface and multiple online platforms to connect with other users. Touchscreen smartphones design and technological advancements have increased the popularity of these products and, thus, user engagement. Newer devices have greater capabilities, and with this comes increased stimuli for the user to experience through UX designers building onto this product to create a touchscreen smartphone with varied platforms.

In 2013, the IDC published a research report in partnership with Facebook. The research concluded that within 15 minutes of users waking up, 80% of people reached for their smartphones before conducting any other activities. The report noted that these statistics drive home the utility and reliance people have on smartphones (IDC, 2013). Many users prioritise their smartphone before any other activity when waking up. The user's reliance on their device to complete tasks such as waking up, planning for the day, and checking in on people, and their need for gratification is checking Instagram, Facebook, and Snapchat. This reliance the user has with their smartphones could be one of the numerous reasons why these products are so engaging. UX-designed products such as Facebook coincide with smartphones forming a bridge for the user to engage with. This is resulting in prolonged user engagement which could explain the enormous success of the tech industry. UX designers create the interface of smartphones, websites, and apps, contributing to user engagement within these products.

Researchers looking into how smartphones are one of the most widely owned products suggest that these devices have become an extension of our mind, body, and social network. (Morgan & Bayer, 2021) Morgan & Joseph elaborate on how phones have become

an integral contributor to the identities of many individuals and the psychological links created between the users and their devices.

Technological advancements have contributed to these psychological links and a forever-growing market sector of these devices, which in turn means more people are affected. UX designers have ensured that there are plenty of platforms available for the user to engage with. For example, an online product called TikTok, where high quality short videos are published for the users to engage with. Previously this would not have been so prevalent as older generations of smartphones could only send messages and make calls and did not have the technological capabilities to house such an online product.

Research suggests that smartphones, and the apps that these devices give users access to, are habit-forming products. When designed as intended, users can engage with the product with minimal conscious thought (Eyal & Hoover, 2014); (IDC, 2013). The hooked theory of Eyal & Hoover outlines how to build habit-forming products without the user consciously recognising the amount of engagement time they have with their smartphone. UX designers have created this framework which is now commonly implemented to make products that are addictive. This aims to increase the user's engagement with their product's resulting in an increase in revenue. In comparison to, industrial designers who create products to solve problems around the world and generate revenue through solutions.

Contrary to this, Career Foundry summarises how the fundamental purpose of online products was originally for connection, curiosity, and engagement, and this should not be forgotten within the tech industry (Browne, 2021). An example is that Google allows you to search for any resource enabling the user to expand their knowledge, and Facebook allows the user to connect with friends and family through photos and messaging. The overarching

purpose of these products is to enable the user to engage with others easily via the app's interface. The role of UX designers is to ensure that their products fulfil this purpose.

Significantly some UX designers are also becoming aware of the consequences arising due to their work affecting their users and the society surrounding us. An example is UX designer Tristan Harris, a former design ethicist for Google. He is now the co-founder of the Centre for Humane Technology (est. 2018), which aims to change the digital infostructure for collective mental well-being (Centre for Humane Technology, 2022). Tristan Harris saw the damage the design of online products was having on users and set out to change how UX designers and multi-billion-dollar tech industries designed online products to keep their users engaged through algorithms and psychology. This relates to the mental well-being of the users engaging with online products. UX designers are identifying the negative impacts on mental well-being in correlation with engagement-driven framework of online products.

During his employment at Google, Tristan Harris created a presentation identifying the arising consequences within the tech industry and, more specifically, within UX design. CNBC further discus’s the presentation that was sent out to his colleagues and, subsequently, the CEO, Larry Page. Many of the viewers of the presentation overwhelmingly agreed with the points brought up, and the information regarding these consequences was spreading. However, the awareness raised by this presentation was short-lived - the CEO of Google took no action or acknowledgement of the effects of their product. (Haselton, 2018) This reinforces how tech-industries disregard the users mental well-being and engagement when interacting with their products. think that the problems arising tend to lie with the tech companies and its inherent culture. A UX designer can try to influence the ethics and framework of UX design, but a company's culture will ultimately navigate the decisions and the designer’s moral freedom within reason.

Chapter Two: Instagram case study and hooked theory

“How can you remain autonomous in a world where you are under constant surveillance and are constantly prodded by algorithms run by some of the richest corporations in history, which have no way of making money except by being paid to manipulate your behavior?” (Lanier, 2018, p. 2)

In his book, Jaron Lanier discusses his theory on how UX design affects users. He explores how algorithms designed by multi-billion-dollar tech industries are programmed to keep the user engaged to meet the company's revenue quota through psychology-based frameworks to manipulate user engagement resulting in addictive products.

An example of one these psychology-based frameworks is behaviourism most prominently explained by the phycologist Burrhus Frederic Skinner. His work investigates how the concept of free will was fundamentally a façade and, instead, explored how all human actions are the direct result of conditioning. (Havard University, 2022) The theory of behaviourism can be applied to UX design - the framework of these products combines technology, design, psychology, and creative methods to produce successful products. Jaron Lanier’s theory suggests that “you can train someone using behaviourist techniques, and the person doesn’t even know it” (Lanier, 2018, p. 7). Behavioural conditioning techniques have been applied to UX design, resulting in the unknowing manipulation of the users engaging with these products. Companies benefit from utilising these methods to boost their revenue.

One theory previously discussed is the work by Eyal and Hoover known as Hooked theory, this utilises behavioural conditioning within their framework. Their findings are commonly used within UX design. Jaron Lanier argues against the ethical values of conditioning

techniques within the tech-industry and how billions of users are being unknowingly subjected to are resulting in the apps increased user engagement through behaviour modification (Lanier, 2018, p. 6). An example of where Eyal and Hoover's theory has been applied which resulted in mass amounts of user engagement, is Instagram, an online platform where the user post photos, like photos, message, and gain followers.

Instagram's UX framework follows the hooked behavioural design method created by Eyal & Hoover which consists of four parts being trigger, action, investment, and variable reward. These four parts are called hooks which draws the user in, keeps them engaged, makes them contribute to the app and then rewards the user (Eyal & Hoover, 2014). Throughout this case study of Instagram, the focus points will be on these hooks which allows for the company to create revenue, the user interface, the hooked theory framework, the thoughts UX designers have for this platform and my thoughts on this.

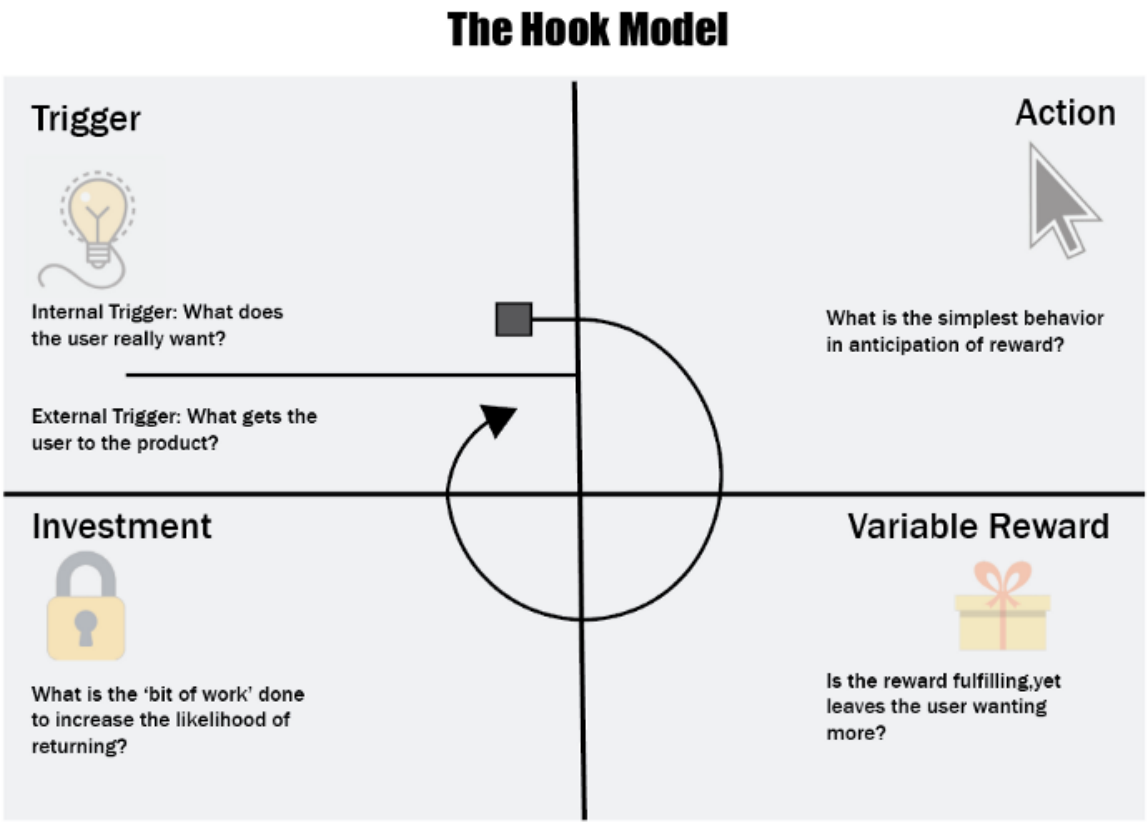

Figure Two, Simplified Hooked model example (Medium, 2022)

As shown in figure two, the hooked model follows four phases resulting in a repetitive cycle allowing for the user to maintain engagement with their product. Figure two shows the process this framework follows along with simplified summaries of what each part of the framework achieves. The hooked model will be referred to throughout the case study of Instagram and what part of the UX experience for the user links back the four phases of the hooked theory and how the conditioning techniques have been applied to create repetitive user engagement.

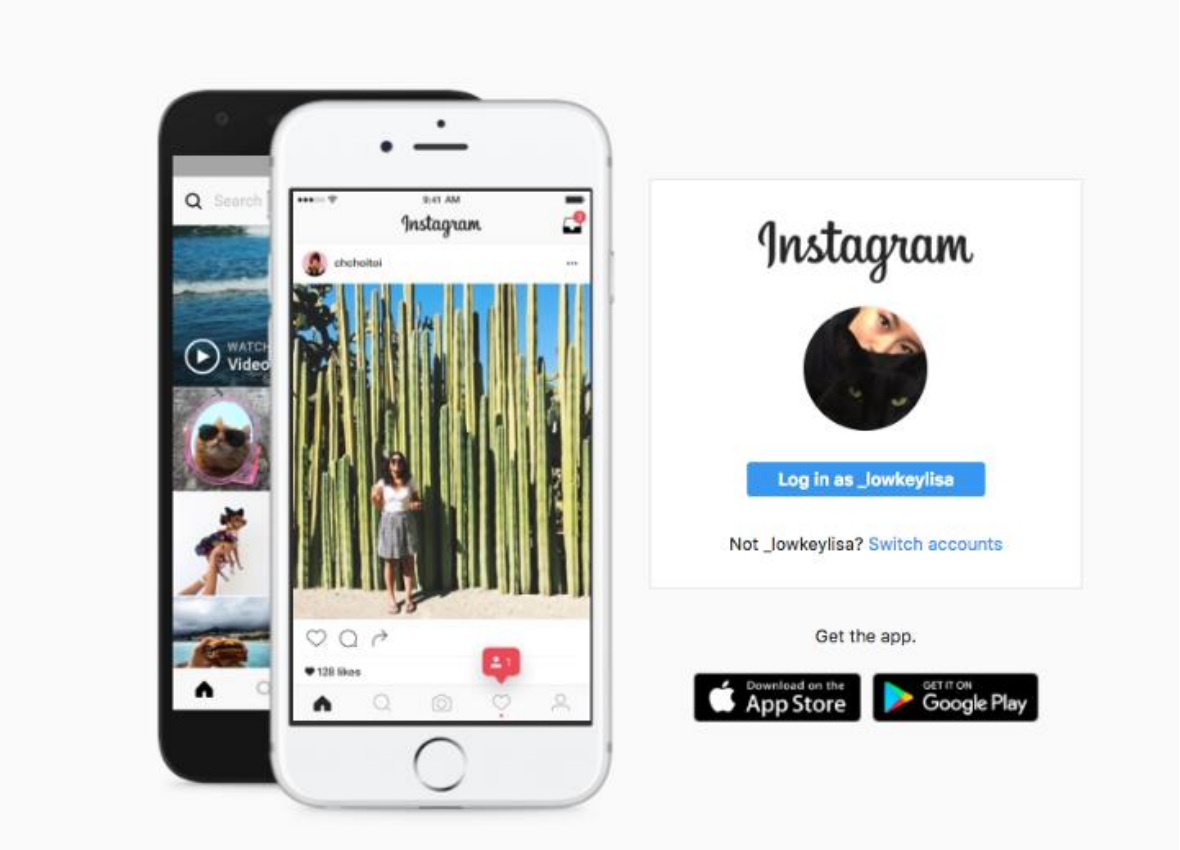

Figure Three, Instagram advertisement post (Medium, 2022)

Figure three shows the home screen layout of Instagram. This interface focuses on the user's photos and virtual stories, making it one of the main focal points of the app. The interface features a whited-out background with minimal icons and options, allowing the user to navigate through the app with ease. This is what the user is introduced to when first opening the app, which instantly provides the user with stimulation which maintains user engagement.

Figure Four, Instagram Notification (Schiffer, 2022)

Hooked theory phase one: Trigger

Shown above in figure four is the notification of Instagram that appears on the users lock screen. The use of notifications allows for the algorithm to entice the user to engage with their product. This feature follows the Hooked phase one methodology known as a trigger, which serves as the cue. This creates the loop of repetitive user engagement which is a specific tactic to remind the user of the app and the content within their smartphone.

The notification typically consists of four main trigger points being:

1. Friends have recently posted

2. You have been tagged in a photo

3. You have received a message

4. A product available for purchase will be available in 5 minutes.

These notifications directly relate to the users interests through the design of the algorithm. “A few external triggers directly say “open this email since you received a new message!” (Apptunix, 2020), this reinforces that the user should open the notification leading to the app through direct instructions being open this which increases the chances of user engagement. After the trigger phase of the hooked model has been repeated numerous times, the user becomes conditioned which changes how the model works from originally enticing the user to the product to the now conditioned user who automatically goes to the product.

According to the Oxford dictionary algorithms are “a set of rules that must be followed when solving a particular problem” (Oxford University Press, 2022). Algorithms for apps are programmed for three main goals being engagement, growth, and advertisement. The algorithm is tailored for each user to heighten the chance of reaching these goals.

The tailoring of these algorithms is completed through multiple ways in which the user unknowingly consents to. This tailoring is refined through how long the user views a post, the posts they like, the posts their friends like and in some cases the algorithm is tailored to the user through what they have searched on google.

It is explored by Jaron Lanier that algorithms gradually change the perception of the user through media where the apps place slightly different content on the platform to alter the preferences of the user. Tailored advertisements are then placed to increase the chances of the user to buy their products.

The Social Dilemma explores the effects of UX design and the conditioning the tech industry uses on their users. A thought-provoking quote from the film is as follows “If you are not paying for the product then you are the product” (The Social Dilemma, 2020) The social Dilemma explores the effects of UX design and the conditioning the tech industry have over their user. The social dilemma explains how products that are free to download such as Instagram are in fact not free as, this argues how you are the product in that market sector. Apps such as Instagram use advertisements to create revenue through other companies and this is how their companies profit from the user according to the three goals of algorithms. They work cohesively to engage the user and market other company’s products with an increased chance of the user purchasing the products through the change of the user’s perception.

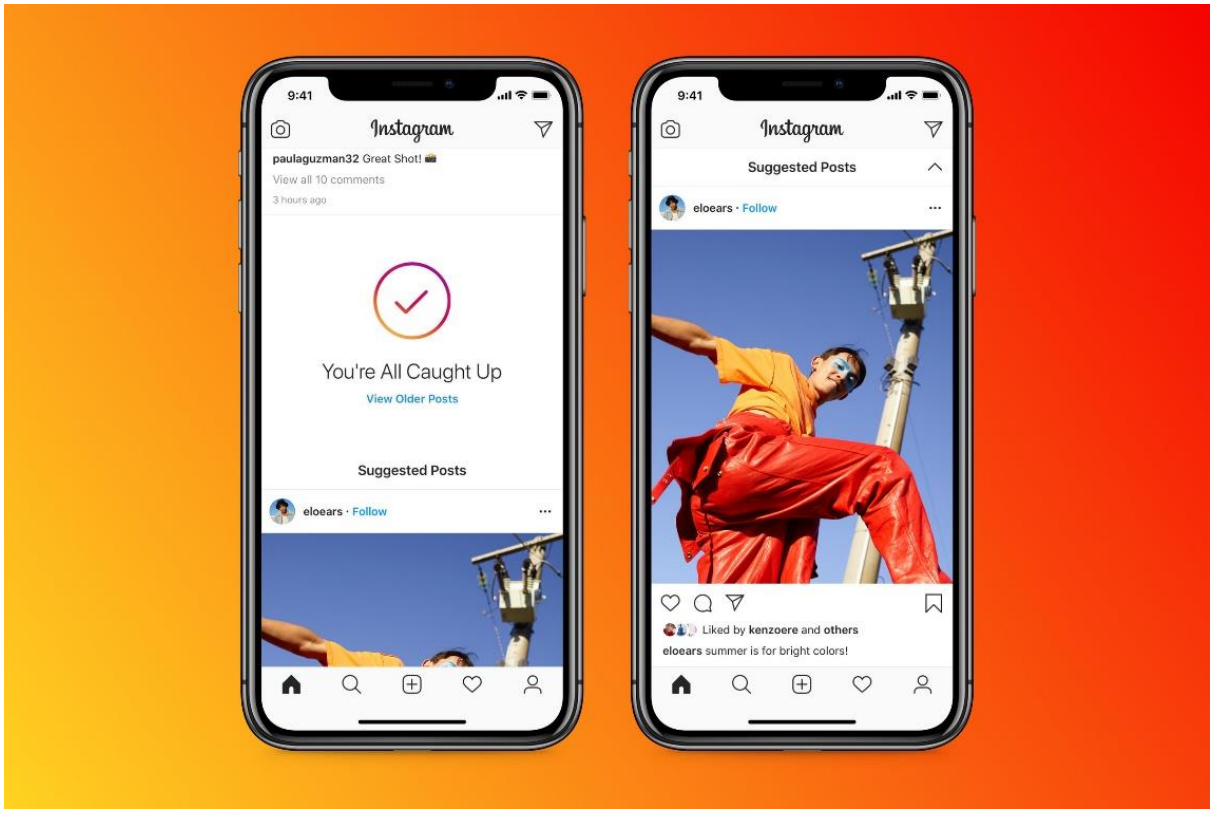

Fig Five, Instagram home page interface (Carmen, 2022)

Hooked theory phase two: Action

Once the user has been triggered with the thought to open Instagram phase two of the hooked model begins. The action phase follows its own framework called the Fogg Behavioural Model which can be shortened to “B=MAP.” This consists of three goals being 1. (B) Behavioural happens when 2. (M) motivation, 3. (A) ability and 4. (P) prompts all occur at the same instance. (Brian, 2022)

The Fogg theory is psychologically based – it prompts the user to make an action by influencing their thought process and in this instance to open the Instagram app. Instagram users open the app through motivation (2.) which is caused through behavioural conditioning (1.), in this instance also known as the trigger phase within the hooked model for example a notification, then the action of opening Instagram which depends on how easy the user

performs this task (3.). An example of the Fogg theory action (3.) is that in some apps the user will need to log into their account first, but Instagram automatically logs the user in, so all the user needs to act on is pressing the app icon, this makes the ability (3.) easier to perform increasing the chances of the prompt (4.) occurring which is the result of conditioning (1.) and action (2.). Beneath is shown a simplified version of this framework.

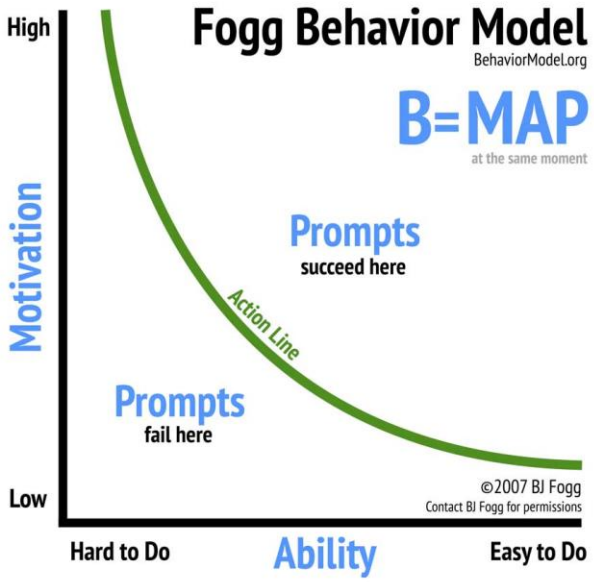

Figure Six, Simplified Fogg Behaviour Model (Fogg, 2022)

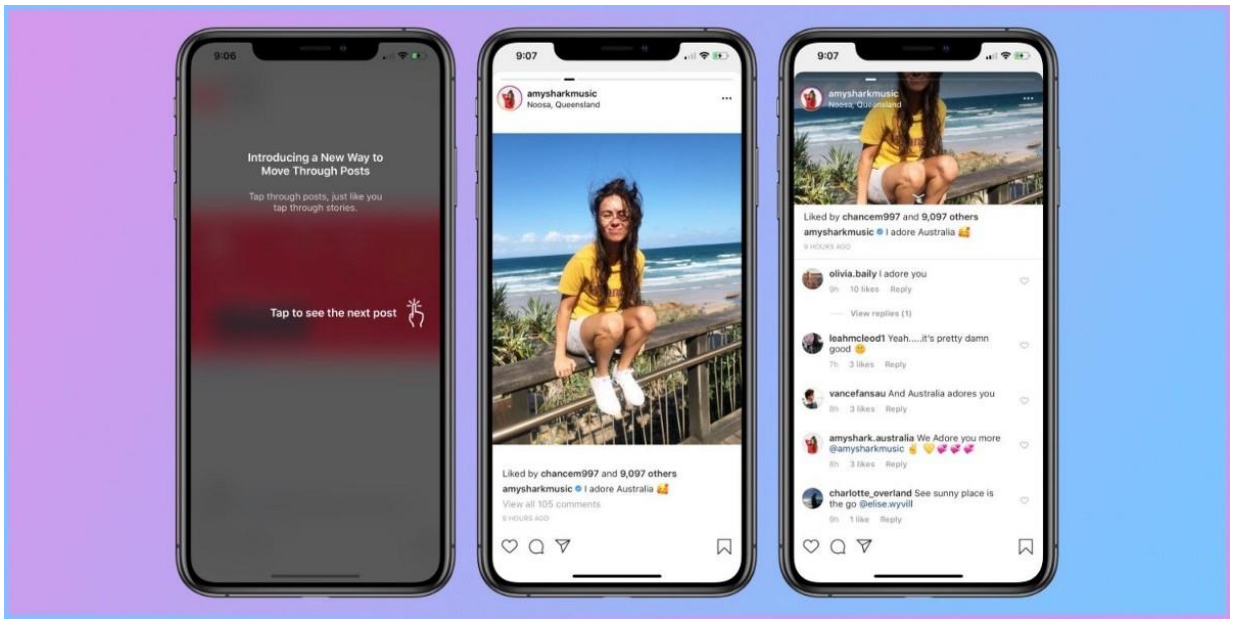

Figure Seven, Example of Instagram's user interface (Bhanot, 2022)

Hooked theory phase three: Variable Rewards

After the user has opened Instagram phase three begins which is known as variable reward. According to the hooked model, this is where UX designers use anticipation of the reward, this can be completed through the infinite scroll, also known as the homepage of Instagram. "The study revealed that what draws us to act is not the sensation we receive from the reward itself, but the need to alleviate the craving for that reward." (Eyal & Hoover, 2014, p. 97)

Designed by Aza Raskin the infinite scroll feature was implemented in early 2010 which has since become a practise standard within UX design with apps such as Facebook, Pinterest and twitter following the same design. The Designer of the infinite scroll decided that this format would allow for an uninterrupted flow for the user to maintain and heighten the user experience and engagement.

According to The Times, since the release of this now standard interface designed by Aza Raskin this UX designer now regrets the infinite scroll he designed as it has increased user engagement majority creating an addicting interface for users to become hooked on. (The Times, 2019) The reasoning for this design feature was to eliminate the user's choice of making another decision to before continuing to browse the app's interface. This is a persuasive design feature which contributes to the user's engagement with the product. This process has been referred to slot machines in which the user wants to continue with the product in case there in something interesting one scroll more. (The Social Dilemma, 2020) This relates back to the study Eyal and Hoover discussed regarding the variable reward in

which the user needs to alleviate the craving of a potential rewards. This design interface follows the less is more feature. This is similar to the hick's law theory where Harvard University explores how by eliminating multiple choices for the user to make the engagement heightened allowing for the user to interact with the product with little thought process. (Havard University, 2022)

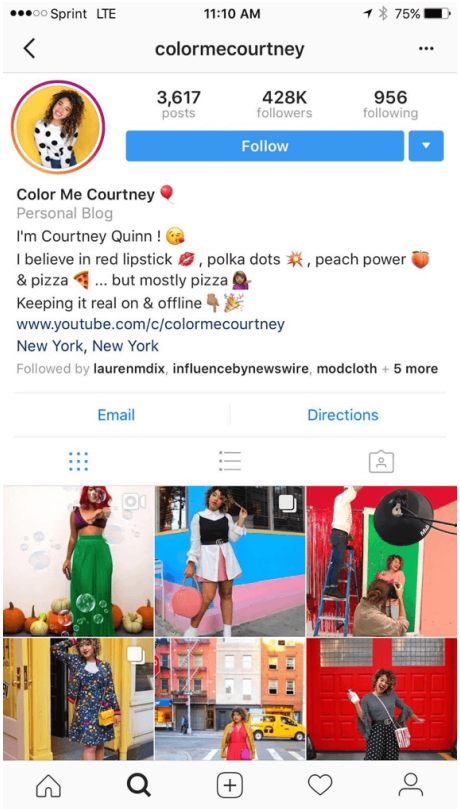

Figure Eight, Example of Instagram profile page (Alisa, 2022)

Hooked theory phase four: Investment

Once the user has launched Instagram the investment phase of the hooked theory now begins. This phase explores the user's output being validation and releases dopamine to the user through their actions on their account, in Instagram this phase is shown through the user's posts, likes, followers and new suggested feed. This relates back to how the user has contributed to Instagram's product to build their own identity in the hopes to gain followers and be inspired through their suggested feed. The algorithm investigates the users posts

and liked posts which results in a tailored feed on the homepage also known as stored value where the user is more likely to engage with the photos relating to their own identity. The user values their own effort and when other users compliment their posts through likes and comments the user who posted on the product then wants to continue posting to gain more followers, likes and comments to have a release of dopamine and validation. This phase reinforces the behavioural conditioning that UX designers have created for their online product where at this stage of the hooked theory the users of the product work for the product to continue building that platform which meets the three goals being engagement, growth, and advertisement.

Another point within the hooked theory is that if the previous phases do not result in the investment phase the algorithm uses the users stored data to continue refining the user's homepage feed. This refinement continues until the user begins reacting to the product through comments, likes and posts. The algorithms main aim is to keep the user engaged with the product.

Once all phases are in effect the cycle continues until the user is hooked on their product and in this instance, Instagram. Once repetitive engagement is achieved the algorithm then suggests adverts and products from the users stored data to increase advertiser's product purchases. If the user likes makeup and shows this through their posts and likes the algorithm, then suggests adverts in the users feed through the infinite scroll design. This heightens the company's chances of the advert resulting in a sell. This is how online products such as Instagram create revenue through advertisements, engagement, and company growth.

Chapter Three: Themes arising and the future of UX design

The work investigated and discussed so far shows a theme throughout the tech industry. My thoughts on this are, algorithms created by UX designers bring the user to their products using psychology-based frameworks to manipulate the user, much like an addiction. According to Edward Tufte “there are only two industries that call their customers ‘users’: illegal drugs and software.” (The Social Dilemma, 2020) This explores the correlation between addiction and UX design and how behavioural conditioning and the use of phycology produces addicting apps without being illegal. Many designers such as Tristan Harris, Aza Raskin, Mike Monteiro, and many others consider the extreme use of phycology in UX design to be unethical and should have rules and regulations. Tristan Harris backs up this thought through the company he has co-founded to fight the use of conditioning and phycological manipulation used within UX design. Mike Monteiro also discusses within Ruined by Design how designers and more specifically UX designers should create their own Hippocratic oath where they protect the users and should be penalised if this oath is broken (Monteiro, 2019, p. 16)

The tech-industries goal of increasing growth and user engagement is also leading to an increase of mental health problems within young adolescent through the consequences of the tech industries goals for increased revenue. According to Northwest Primary care Technology addiction contributes to sleep deprivation, decreased self-esteem, decreased physical activity and a decrease in young adolescent’s attention span (Northwest Primary Care , 2022). Tech addiction consequences lead to a heightened chance of developing mental health problems within young adolescents.

Social media exposure and cyberbullying is increasing the chances of people developing mental health problems and contributes to low-self-esteem. Young adolescents in particular

are more susceptible to social media and cyber-bullying as during this physical and mental developmental stage in their life. The adolescent's perspective is changing, and they resort to social media to research what they should act, think, and look like. This leaves users exposed to toxic media such as pro ana which promotes anorexia and capitalist culture where influencers post their products which makes the followers and, in this instance, younger adolescents want to buy their products to fit in. Adolescents strive to fit in with what their peers by what they are wearing or which makeup they are using, and thoughts such as how you should act, behave, talk through influencers posting videos.

This backs the thought of Jaron Lanier and Mike Monteiro who argue that UX designers are contributing to the dissolution of people and the society. People are contributing a large amount of their time mindlessly browsing through apps through the addicting design interface created.

Contrary to this social media in young adolescents is promoting social inclusivity and connectivity. According to Healthline, social media in moderation can promote friendship and decrease loneliness and isolation (Healthline, 2022). An example of where social media has provided adolescents with these positive benefits is the covid-19 pandemic where friends and family were isolated to their homes in which they relied on social media to connect and stay connected with others. Especially in young adolescents' social inclusivity is crucial for benefiting their mental health and promoting social behaviour. Compared to the arguments made regarding the negative impacts of social media amongst young adolescents, this demographic has also benefitted from social media during times of need which promoted mental well-being and education.

My thoughts on the use of social media in correlation with young adolescents are that if these online products are designed to not be addicting with the user knowingly consenting. Along with the online products designed for promoting social inclusivity, connection, and

educational purposes, that UX design has positively contributed to society rather than for capitalist intentions.

Previously discussed is the continuously growing market sector of smartphones and how this is the bridge for the users to reach UX designer's online products. Despite this, technology is further advancing, and the progress of human implanted smart-technology becomes more realistic and accessible for people to buy. If human implanted technology becomes as successful as smartphones and UX designers create addictive online products using frameworks such as hooked to further increase the tech-industries capital, will ethical guidelines like the doctors Hippocratic oath be a result of new human-centred technological advancements which coincides with the 4th industrial revolution?

Figure Nine, Mojo scleral lens exploded view (Mojo Vision Inc, 2022)

Shown in figure nine is the mojo lens, which is currently in development, where online products such as Alexa are being uploaded on for the user to have integrated software into their eyesight through a scleral lens (Mojo Vision , 2022). If UX designers with capitalist driven tech-industries design for such immersive human-implemented technology will this be an ethical choice where UX designers are creating products for money or for people?

Conclusion

This dissertation aimed to identify whether capitalism is overtaking UX design and negatively impacting the user's mental well-being. My thoughts on the investigated conducted Is the following. Despite the many applications where UX design has been a great asset to society and allowed people to connect across the world, that the tech-industries drive for generating capital has affected the fundamental qualities of what UX design is. Currently UX design is affecting the user's mental well-being through how motivation and emotions are delivered to the user through the tech-industries algorithms and frameworks of UX design.

Currently, industries in UX design are diminishing the user's mental well-being. Yet, as more UX designers come forward and talk about the problems with the current algorithm; and research papers back up their arguments. I believe that it's not a matter of 'if' there is change, but 'when' there is change. Either through companies finding more effective monetization that doesn't negatively impact the user, or organizations and governments implement stronger laws, restricting the addictive frameworks which the tech industries want UX designers to create.

With continuous growth in the smartphone market, as well as it becomes more affordable to the masses, preventing the negative impacts smartphones have on our well-being is crucial. The current popular framework amongst companies being the ‘hooked’ model, this framework is used in the most popular apps on the market create a constant battle for attention.

The continual stimulation and output of emotions these online products have on the user are resulting in conditioned behaviour where UX designers have used psychology-based frameworks to manipulate the users experience with their product. An example of one of these frameworks previously discussed was Instagram where the online product was designed to be addictive rather than engaging which followed the hooked framework theory. The constant refinement of creating algorithms to increase the user’s engagement has in my opinion pushed society away from the real world and instead to an immersive one. Users post to feel validation and success rather than sustained stimulation through their existing surroundings. This in my opinion is diminishing the user’s mental well-being.

Contrary to my statement on this topic, it is also important to consider that the dissertation has also investigated the attributes of UX design and how these beneficial factors have positively affected young adolescents and their user’s mental well-being. An example of where UX design has been extremely beneficial to society is the covid-19 pandemic where online platforms allowed for people to stay connected digitally despite physical isolation.

Significantly whilst UX design and capitalism has impacted people's lives in many ways. it’s clear it has also been harmful to the wellbeing of the end user. The current frameworks we have implemented in UX design has created a hazardous addicting algorithm that places financial return ahead of the user.

To greater understand the future implication of user's mental well-being of online products research was conducted on the future of human integrated technology and whether UX designers will continue to make addictive frameworks to further immerse their users in the digital world. The research into human implemented technology explored how creating ethical guidelines in consideration of the user's engagement time and mental well-being with new emerging technologies would be beneficial to the users and society.

I propose by implementing ethical guidelines within UX design that the negative impacts on the user's mental well-being will be decreased as the user will be less immersed with online products and instead will have more time to focus on their existing surroundings without the tech-industries conditioning their users to generate revenue.

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