

Scrolling Through Time:
An Exploration of the Relationship Between Social Media, Digital Platforms,
Time, and User Well-Being

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Abstract:

This research paper explores the current relationship users have with social media, and how digital platforms impact users' well-being and time management. Strategic foresight and systems thinking are leveraged to understand the topic presently, and also to explore what that relationship could look in the future. This report presents a series of recommendations that social media companies can leverage to better serve their users and give them more tools to practice mindful digital content consumption.

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Introduction

Social media (SM) and digital platforms have proven themselves to be a crucial part of modern-day society on a multitude of levels, including the individual, economical, educational, cultural, and more. Everyday users of these tools meet, share, discover, learn, play, and entertain themselves on different digital social platforms (notably Facebook, Instagram, and TikTok) and with several services (Netflix, Amazon Prime Video, YouTube, and others).¹ These platforms and services continue to adapt to their market and the demands of their users.

Prior to the COVID-19 pandemic, SM was embedded into the everyday life of modern individuals and society with over 60% of millennials checking their phones first thing in the morning.² As of 2021, over 6.3 billion people had smart phones, and there are over 10 billion IoT (Internet of things) devices connected in the world.^{3,4} The shift to a more digital space for social interactions and commerce seemed inevitable. The wild card event of the COVID-19 pandemic sped up this transition and forced many companies to adapt. Private and public corporations, schools, and brick and mortar stores leveraged the available platforms and digital services to stay afloat amidst the uncertainty that came with the ever-changing COVID-19 restrictions.⁵

Individuals can now purchase groceries online and attend work meetings and classes via Zoom or Microsoft Teams. Around 2.5 quintillion bytes of data are created every day via IoTs. This number includes SM posts, text messages, e-mails, engagements, reactions, and uploads and downloads of data.⁶ Individual users, companies, and news sources simultaneously create, upload, and share content on the web. The output of this collective action is a near infinite amount of singular content.⁷ Users are then presented with a large collection of content but interact with only a limited portion of it. These seemingly infinite sources of content to choose from helped

¹ In this research paper, the terms “users” and “SM users” are interchangeable.

² Diane Thieke, “U.S. Smartphone Users Statistics A 'Round-the-Clock' Connection,” ReportLinker, March 14, 2019.

³ IoT (Internet of things): Any physical object or group of physical object that can connect and exchange data with other objects via the internet. IoTs are equipped with sensors, software and computer capabilities that allow them to connect to the internet.

⁴ Ash Turner, “How Many People Have Smartphones Worldwide,” *BankMyCell*, February 28, 2022.

⁵ Patrick Ercolano, “Covid-19 Is Transforming How Companies Use Digital Technology,” *The Hub*, July 27, 2020.

⁶ Jeff Schultz, “How Much Data Is Created on the Internet Each Day?,” *Micro Focus Blog*, April 23, 2020.

⁷ In this research paper, the words “company” or “companies” refers to any large social media company such as Facebook, Twitter, Instagram or TikTok, unless stated otherwise.

cause the creation of terms like FOMO (the Fear Of Missing Out), doomscrolling (addictively scrolling through bad news) and others to emerge.^{8,9} These example terms show how users are becoming subject to the “attention economy,” a term coined by economist and psychologist Herbert Simon.¹⁰ Here, attention is defined as a focus on a select stimuli a user experiences while disregarding other stimuli in their surroundings.¹¹ The attention economy, according to Simon, views human attention as a finite source, but shows how attention is also the primary source of user engagement on SM platforms.

The design of SM platforms encourages users to keep engaging with the product and to spend time interacting with it.¹² The exclusive focus on engagement inadvertently forces a neglect of users’ overall well-being. To better serve their users, social media companies (SMCs) might want to consider the users’ time as more than a mere tool to enable company profit and growth.¹³ With this sudden thrust into the digital world, many individuals started to be more in tune with the different ways they invest their time and attention, and how so much of it is spent behind the screens of televisions, laptops, phones, tablets or even smartwatches.¹⁴

As of the writing of this paper, it seems that a change in the way SMCs operate is an inevitability, and will probably happen sooner rather than later. As will be explicitly explored further in this paper, users around the world are beginning to recognize the harmful effects of SM on their mental and physical health. These same users are starting to reformulate their relationships to SM in an effort to bridge the gap between the necessities of SM in daily life and the de-

⁸ The fear of missing out, or FOMO, is the “fear of not being included in something (such as an interesting or enjoyable activity) that others are experiencing.”

“FOMO,” *Merriam-Webster* (Merriam-Webster).

⁹ “Doomscrolling and doomsurfing are new terms referring to the tendency to continue to surf or scroll through bad news, even though that news is saddening, disheartening, or depressing.”

“Doomsurfing and Doomscrolling Meaning,” *Merriam-Webster* (Merriam-Webster).

¹⁰ Ally Mintzer, “Paying Attention: The Attention Economy,” *Berkeley Economic Review* (University of California, Berkeley, March 31, 2020).

¹¹ Lexie Kane, “The Attention Economy,” Nielsen Norman Group, June 30, 2019.

¹² Nir Eyal and Ryan Hoover, *Hooked: How to Build Habit-Forming Products* (Toronto, ON: Portfolio Penguin, 2014), 154-161.

¹³ Tonya Mosley and Allison Hagan, “‘The Social Dilemma’ Director Says the Internet Is Undermining Democracy,” *Here & Now* (WBUR, September 18, 2020).

¹⁴ Ofcom, “The Communications Market Report 2016,” *Ofcom*, August 4, 2016.

terments to their mental, physical, and social well-being. That being said, the current revenue structures of SMCs give more power to data brokers and advertisers than they give to users.

It is the downstream effects of this lack of power held by users that seems to be driving the coming changes to SMCs. While the users themselves lack the power to initiate real change in SM, the harm to users is then in turn causing harm to people and systems that do have the power initiate change. On October 5th 2021, Frances Haugen (more commonly known as the Facebook whistleblower) testified to the Senate of the United States of America on a diverse range of subjects. These topics included SM's effect on physical and mental health, and on its national and international effects to politics through misinformation. Notably, Haugen backed up her claims with private and internal studies done by Facebook itself, studies which she also leaked to the US government and various news publications.¹⁵

The information Haugen leaked revealed that Facebook's algorithms not only present users with posts out of chronological order, but they emphasize presenting users with posts that are most likely to be meaningfully interacted with; for Facebook, a meaningful interaction includes any type of engagement that is visible to others, such as sharing liking, commenting, disliking, or reacting with an angry emoji.¹⁶ Other recent studies have shown that the SM posts most likely to be interacted with and then shared include negative affective words and phrases that define and target an out-group.¹⁷

Various governmental and regulatory bodies have begun to recognize the links between these recent revelations and events. The storming of the US Capitol building by supporters of former US President Donald Trump has been explicitly tied to misinformation spread on SM, all of which was exacerbated by various SMCs' algorithmic tendencies.¹⁸ The ethnic strife and suspected ongoing genocides in Myanmar and Ethiopia have also been directly tied to SMC's and

¹⁵ Bobby Allyn, "Here Are 4 Key Points from the Facebook Whistleblower's Testimony on Capitol Hill," *NPR* (National Public Radio, October 6, 2021).

¹⁶ Daniel E. Slotnik, "Whistle-Blower Unites Democrats and Republicans in Calling for Regulation of Facebook," *The New York Times* (The New York Times, October 26, 2021).

¹⁷ Steve Rathje, Jay J. Van Bavel, and Sander van der Linden, "Out-Group Animosity Drives Engagement on Social Media," *Proceedings of the National Academy of Sciences* 118, no. 26 (June 23, 2021).

¹⁸ Sheera Frenkel, "The Storming of Capitol Hill Was Organized on Social Media," *The New York Times* (The New York Times, January 6, 2021).

their profit motives.^{19,20} One of the complaints in a recent 150 billion USD class action lawsuit claims that Facebook was “willing to trade the lives of the Rohingya people for better market penetration in a small country in south-east Asia.”²¹ Within three weeks of the submission of this paper, Assembly Bill 2408 passed the California Assembly Judiciary Committee with unanimous and bipartisan support. The bill would allow SMC’s to be sued for harm that came to children from SM addiction, but explicitly allowed for exemption if the SMC in question “identifies and removes addictive features of their platform within a specified amount of time.”²² The bill directly mentions mental and physical health and addiction, and directly references the internal Facebook studies leaked by Haugen.²³

The political and other downstream effects of SMCs’ current design and revenue models are widely and thoroughly explored elsewhere. They are mentioned here to emphasize that current trends, while still profitable, are not sustainable. Changes to SMC practices seem to be on the horizon, whether they are forced from the outside by domestic and international legislation, or adopted willingly and internally. SMCs currently have the opportunity to be the initiators rather than the victims of a paradigm shift in the way the world uses SM. This paper presents an alternative model that could not only rectify the issue of SM addiction, but also lessen the negative effects to mental, physical, and social health. Importantly, this new model also offers a way to increase profitability along the way.

Systems thinking and strategic foresight tools and approaches are leveraged throughout this paper to understand the current ways users interact with mobile applications, and to explore

¹⁹ Emmanuel Akinwotu, “Facebook’s Role in Myanmar and Ethiopia under New Scrutiny,” *The Guardian* (Guardian News and Media, October 7, 2021).

²⁰ Jasper Jackson, Lucy Kassa, and Mark Townsend, “Facebook ‘Lets Vigilantes in Ethiopia Incite Ethnic Killing,’” *The Guardian* (Guardian News and Media, February 20, 2022).

²¹ Dan Milmo, “Rohingya Sue Facebook for £150bn over Myanmar Genocide,” *The Guardian* (Guardian News and Media, December 6, 2021).

²² Peter Suci, “Social Media Liability Bill Passed California State Committee - Are Teens Actually ‘Addicted’ to Social Media?,” *Forbes* (Forbes Magazine, May 6, 2022).

²³ Susannah Luthi, “Instagram, TikTok Could Get Sued for Addicting Kids under California Proposal,” *POLITICO* (Politico, March 15, 2022).

new avenues that mobile applications can adopt to be more user-centred.^{24,25} More specifically, this paper aims to rethink how digital tools and mobile applications can give the control of time and attention back to their users, while maintaining their importance and role in life. With a Human Centred Design approach (HCD), this paper tackles the following problem statement: How might we create SM and digital platforms that allow the user to be more in control of their time and their attention, while being beneficial to their overall well-being?²⁶

The following methodology section will explain and explore the tools used in this paper, the sections after will apply these tools and explore the alternative model that results. Finally, the analysis will conclude with a set of seven recommendations that SMCs can adopt when developing their products. These recommendations would allow users to have more control over how they interact with SM by suggesting alternative revenue streams for SMCs, by allowing users to personalize the way they engage with digital platforms, and with the addition of certain features to SM platforms that focus on supporting users' well-being and mental health.

²⁴ Systems thinking is an analytical approach that takes into account the way every participant in the system influences other another. Systems thinking is leveraged to identify the relationships between events in a system and the systems stakeholders. It is used to illustrate verbally and visually complex relationships within systems.

Donella H. Meadows and Diana Wright, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Publishing, 2008), 268.

²⁵ Strategic foresight falls under the field of future studies. It is different from forecasting as forecasting takes data (usually quantitative) that helps predict or anticipate an outcome with a significant level of certainty. Strategic foresight takes both qualitative and quantitative data and utilizes them to build possible images of the future.

“Strategic Foresight,” OECD (Organisation for Economic Co-operation and Development, n.d.).

²⁶ Human centred design (HCD) is a design philosophy and approach to problem solving that takes into account the users' well-being and satisfaction. As the name would suggest, HCD practitioners put the human at the centre of their design decisions. It is often utilized in the fields of UX design and service design.

“What is Human-Centered Design?,” The Interaction Design Foundation, n.d.

Methodology

Causal Layered Analysis (CLA)

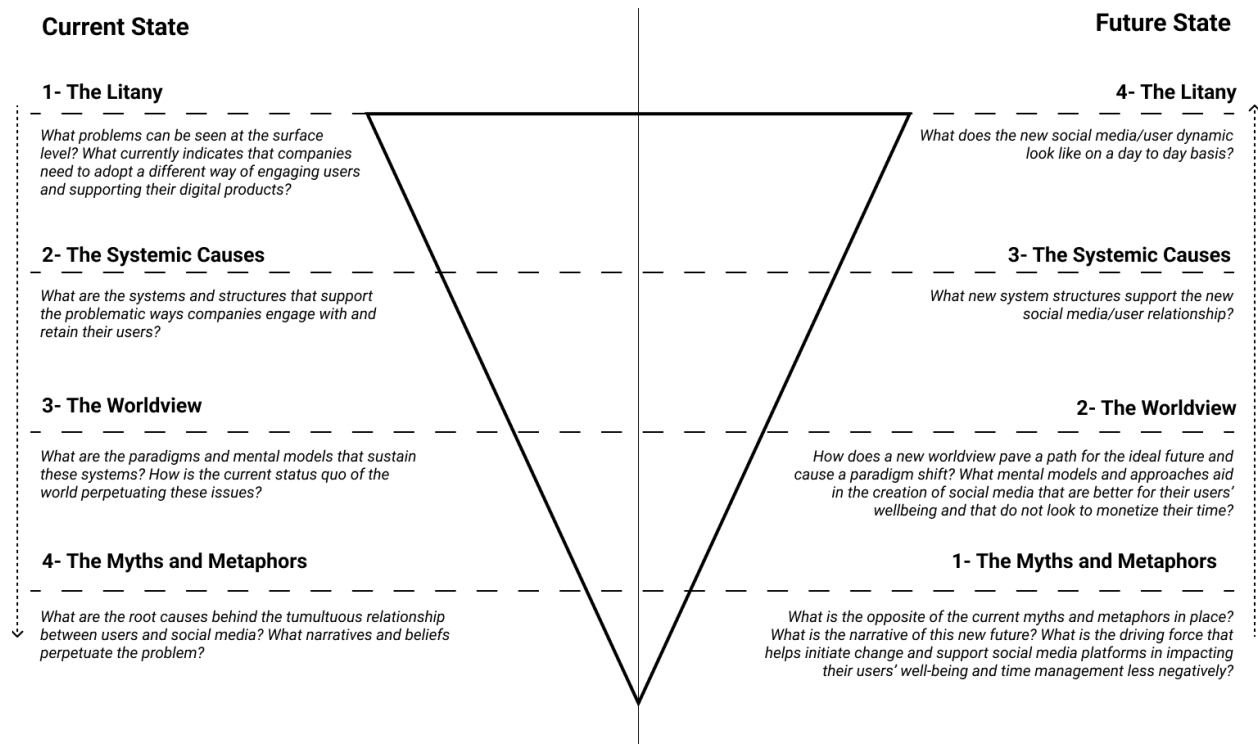


Fig.1: The Different Levels of a Causal Layered Analysis
Author, 2022

To unpack the problem statement, a strategic foresight and systems thinking tool called the Causal Layered Analysis (CLA) is used. Simply put, CLA is an analytical tool used in foresight studies to pick apart a current system, and analyze the problems found on a series of layers that go deeper than simple cause and effect. It enables an analysis of complex topics and issues at four different dimensions. In this paper, the CLA is used to explore the present state of users' relationships with SM. The research will follow the structure of the CLA to analyze the current problem. This begins with studying the first dimension of the CLA, the Litany. The Litany showcases surface level problems. In this case, what signs show that SMCs need to adopt a different way of engaging users and supporting their digital products? The analysis in the Litany is then followed by the second level of analysis, the Systemic Causes. This level explores the systems and structures that support the problematic ways in which SMCs engage with and retain their

users. The third level of analysis is that of the Worldview. Here the paradigms and mental models that sustain these systems are identified. In other words, how is the current status quo of the world perpetuating these issues? The findings from the three initial layers of Litany, Systemic Causes, and Worldview, make room for the fourth and final of the layers, Myths and Metaphors. Here the root causes behind the issue at hand are identified.

The CLA also gives a structure to explore, define, and to build what an ideal relationship between SM and its users could look like. The value of the CLA tool emerges after identifying the problems in the Litany and finding the systemic structures that perpetuate them in the layers beneath. By using the CLA tool in reverse, an alternative structure can be created from the ground up that rectifies the problems and avoids others of a similar nature. The future state CLA details an alternative ideal dimension of Myths and Metaphors that are favourable to achieving the desired future. The identified foundation of the future state offers an opportunity to build the remaining layers of the Ideal Future State CLA: the Worldview, the Systemic Causes, and the Litany.

Three Horizons (3H)

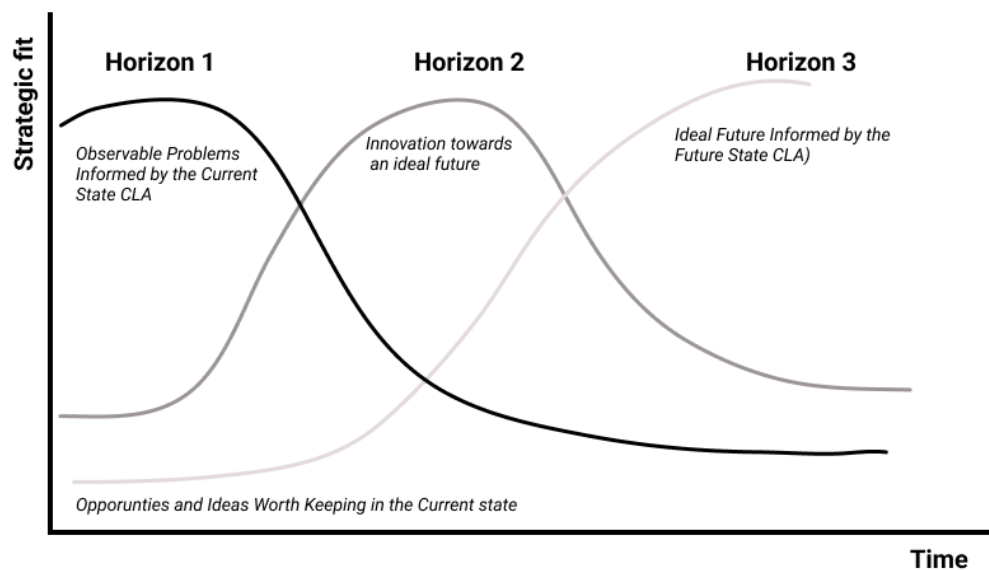


Fig.2: The Three Horizon Framework and its Relations to the CLA
Author, 2022

In this paper, the Three Horizons Framework (3H) is a strategic foresight tool and framework that helps to visualize a path forward. The information discovered in the Current State CLA is applied to Horizon 1 (H1), while the Ideal Future State CLA is envisioned by Horizon 3 (H3). H1 represents what needs to be moved past, while H3 represents an ideal vision of a future that might not be achieved. Horizon 2 (H2) is where both action and results are found. It is the transitory state that continuously improves upon the Current State CLA embodied in H1, while striving to transition to the ever-improving vision of the Future State CLA embodied by H3. In the context of this paper, the 3H framework will tackle the following:

Horizon 1 (H1): What is the Current State of the issue? How are people consuming SM and why is it problematic? What opportunities and ideas are signalling a shift in the status quo?

The Current State CLA will provide answers to these first two questions. An analysis of current trends in SM consumption and digital technologies highlights how users are taking more control of their personal time and attention. The results of this analysis will inform the opportunities that are signalling a shift in the way users interact with SM, and in the way SMCs are catering to their users.

Horizon 3 (H3): What does the ideal state look like? What does a world where users feel more ownership over their time and attention in regard to social media look like?

H3, informed by the Future State CLA, while not a current reality, presents an alternative future that SMCs should strive for, in an effort to better serve their users, to deliver satisfying products that support users' needs rather than cravings, and to regain consumer trust.

Horizon 2 (H2): How can a transition between Horizon 1 (the Current State) and Horizon 3 (the Ideal Future State) occur?

H2 presents a pathway to a viable future by posing the following questions, what recommendations and strategies can help users take more ownership over their time and attention? How can SMCs support their users in this endeavour? Why should companies support their

users? H2 is where concrete progress can be made by implementing recommendations informed by the two CLAs. This analysis is fully explored in the Moving Forward section of this paper. The detailed 3H analysis can be found in Appendix A.

Business Model Canvas (BMC) and Value Proposition Canvas (VPC)

The Business Model Canvas (BMC) is a visual template used to understand the way companies operate and to create new business models. It provides a visual graphic (see fig.3) detailing the components indicating a company's value proposition (what the company offers its customers), infrastructure (how it operates), consumers (who it serves), and finances (how it is profitable).²⁷

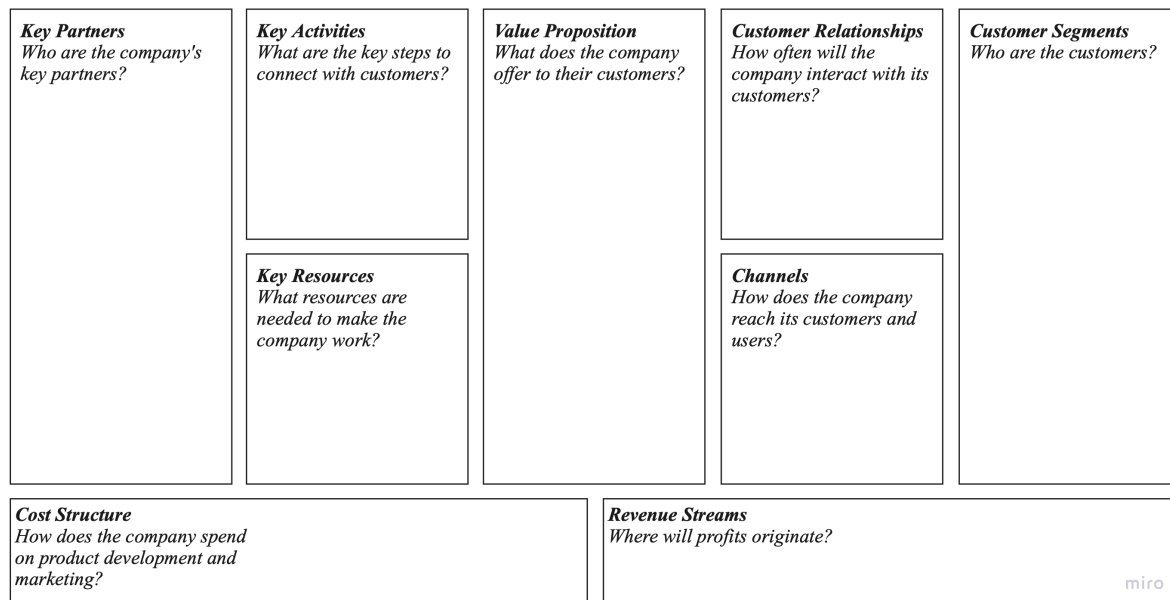


Fig.3: The Business Model Canvas
 Author, 2022

The Value Proposition Canvas (VPC) serves as an accompanying template to the BMC. It aids in understanding what the companies are offering in terms of products and services while

²⁷ Alexander Osterwalder and Yves Pigneur, *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers* (Hoboken, NJ: John Wiley & Sons, 2010), 91-92.

also defining how these offerings are positioned around the needs of their customer segments (see fig 4).²⁸

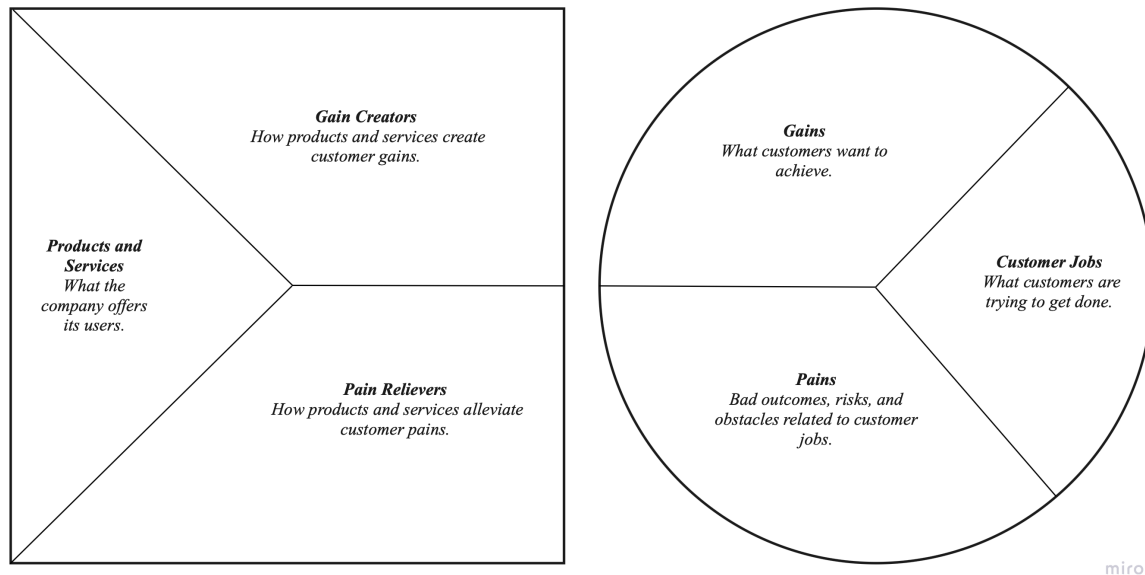


Fig.4: The Value Proposition Canvas
Author, 2022

In the Current State analysis, the BMC and VPC serve to understand the current ways SMCs operate and how their business models perpetuate the problems at hand. These two templates then serve as a tool to reconfigure the operating models of these SMCs and to understand what these models could look like in the future. The BMC and VPC analysis focuses specifically on three main components, the value proposition, customer segments, and revenue streams of SMCs. The findings of the VPC and BMC analysis are presented in Appendix B.

Literature Review

The literature review in this research is used to inform the tools mentioned above. It helps to define the boundaries of this research and to guide it. Information was collected from a variety

²⁸ Alexander Osterwalder et al., *Value Proposition Design: How to Create Products and Services Customers Want* (Hoboken, NJ: John Wiley & Sons, 2015), 62-63.

of sources including academic studies, news articles, SM articles, SM posts, books, documentaries, interviews, and op-eds.

Methodology Conclusion

While all five of these tools (the CLA, 3H, BMC, VPC, and Literature Review) are useful on their own, their combination is necessary for the proper exploration of this research. The BMCs and the VPCs aid in visualizing the problems inherent to the Current State CLA, and also help shape the Ideal Future State CLA. Finally, the 3H Framework brings together the findings of prior tools to investigate practical and actionable recommendations that promote a move from the Current State to the Ideal Future State. In short, their synthesis is necessary for a more holistic exploration of this research. The following section, titled the Current State CLA, begins with identifying the current problems of SM usage, and unpacks them in order to discover what systems and forces drive them.

Causal Layered Analysis: The Current State

Time is Money

The Current State CLA, also referred to as *Time is Money*, explores the different ways SM negatively effects its users at a surface level in the Litany. It then details how these issues are the result of Systemic Causes embedded in the design and implementation of these SM platforms. From there, the Worldview looks to identify the paradigm and mental models that sustain these structures. Finally, a global look at the existing Myths and Metaphors present the underlying narratives that perpetuate the problems at hand.

Current State

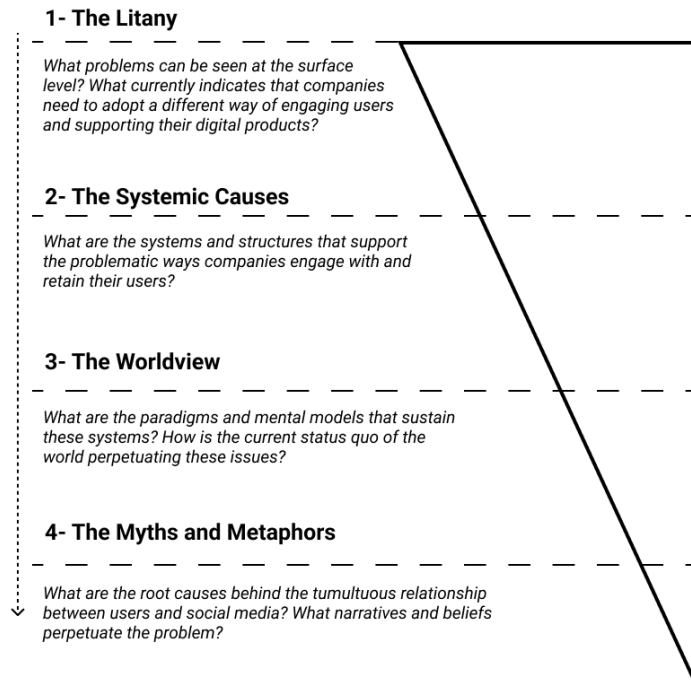


Fig.5: The Layers of the Current State CLA
Author, 2022

The Litany

What problems can be seen at the surface level? What currently indicates that companies need to adopt a different way of engaging users and supporting their digital products?

The analysis of the Current State Litany shows that SM's effect on mental health is a cause for concern and that excessive use of SM can be harmful to the user.²⁹ Furthermore, the Litany also showcases how SM and digital technologies can interfere with a user's free time in a phenomena called "time confetti," a term which refers to the perceived loss of time due to re-

²⁹ Hassan Ebrahimpour Sadagheyani and Farin Tatari, "Investigating the Role of Social Media on Mental Health," *Mental Health and Social Inclusion* 25, no. 1 (2020): pp. 41-51.

peated interruptions. Users have become overwhelmed by their dependency on SM platforms and are intentionally minimizing their time on screen and the mobile applications they use.

I. SM's Effect on Mental Health, Physical Health, and Loneliness

In 2020, Netflix released the docudrama *The Social Dilemma*. This documentary illustrates the effects of SM on mental health with two scenarios which follow the children of an American family. The first child, a preteen girl, gradually becomes more concerned with the engagement numbers on a picture she posted. She slowly begins to value herself by the rates and frequency of those engagements. To prepare for a photo, she takes the time to apply make up and attempts several photos before finally settling on the one she wishes to post. Her bother is portrayed as falling victim to the trope of digital consumption as targeted content keeps him scrolling through the web.³⁰ The scenarios portrayed in *The Social Dilemma* illustrate what several studies currently allude to; excessive use of SM can be detrimental to the mental and physical health of its users. A publication in *The Journal of Mental Health and Social Inclusion* took into account over five hundred publications related to the effects of SM on mental well-being in order to formalize this claim.³¹ In 2019, the Nordic Council of Ministers and the Happiness Institute also explored the same issue of SM related health detriments, but specifically targeted users aged between 15 and 16. Both studies complement each other by concluding that SM can have positive or negative effects on the users.³² The negative effects include poor mental health due to an increase in feelings of anxiety, depression, and loneliness.³³

Extreme use of certain SM platforms also correlates with increases in negative social comparison, decreased social activity, decreased trust, and decreased rates of volunteerism.³⁴ According to the Norwegian study, these implications are specific to SM users who consume digital online content without necessarily participating in it. These users are referred to as passive users. Passive users have vocalized that they are not satisfied with their life. They spend their time star-

³⁰ Jeff Orlowski, dir *The Social Dilemma*. Netflix, Los Gatos, CA, 2020.

³¹ Sadagheyani and Tatari, "Investigating the Role of Social Media on Mental Health," pp. 41-51.

³² Michael Birkjær and Micah Kaats, "#SortingOutSocialMedia" (Nordic Council of Minister, 2019).

³³ Sadagheyani and Tatari, "Investigating the Role of Social Media on Mental Health," pp. 41-51.

³⁴ Birkjær and Kaats, "#SortingOutSocialMedia."

ing at their devices and feel they are missing out on enjoying their free time; the isolation that results from excessive use of SM significantly decreases social capital and life satisfaction, while increasing self-comparison to other people.³⁵ These findings are also supported by a study conducted by two University of Oregon doctoral students, Matthew Pittman and Branch Reich, whose analysis compares how different social platforms effect user loneliness. Again, they found that loneliness is accompanied by high SM usage.³⁶

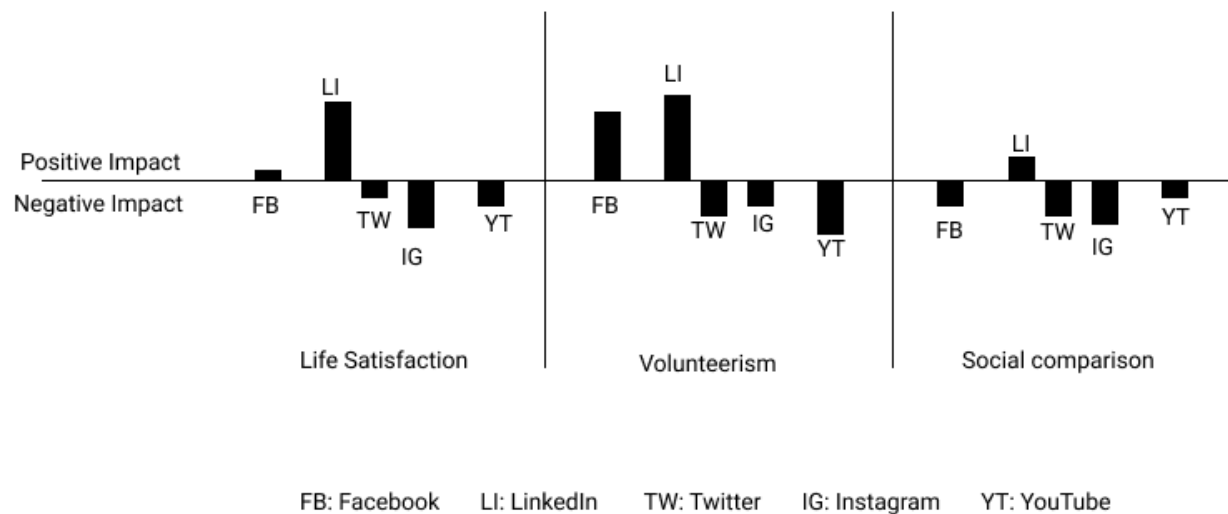


Fig. 6: Different SM platforms' Effect on Life Satisfaction, Volunteerism, and Social Comparison
Author, 2022

Finally, SM usage can result in chronic sleep deprivation, which can exacerbate existing anxiety and depression disorders.³⁷ A study published by the *Canadian Medical Association Journal* states that even the presence of a mobile device can reduce the time and quality of sleep in an individual. The correlation between sleep deprivation and SM use is “possibly related to the temptation to check media devices when they are present or owing to a conditioned response involving increased arousal.”³⁸

³⁵ Birkjær and Kaats, “#SortingOutSocialMedia.”

³⁶ Matthew Pittman and Brandon Reich, “Social Media and Loneliness: Why an Instagram Picture May Be Worth More than a Thousand Twitter Words,” *Computers in Human Behavior* 62, no. C (September 2016): pp. 155-167.

³⁷ Elia Abi-Jaoude, Karline Treurnicht Naylor, and Antonio Pignatiello, “Smartphones, Social Media Use and Youth Mental Health,” *Canadian Medical Association Journal* 192, no. 6 (February 2020).

³⁸ Ibid.

The negative impact of SM on mental health is partially due to the way regulars use SM, and partially due to how often they use it. These studies do not go so far as to demonize all types of SM, but instead focus on the value that SM consumption can add to or take from one's time, attention, and general well-being. In fact, researchers even emphasize that SM can be a tool for building connection and relieving loneliness if designed with the well-being of the user in mind.³⁹

II. Time Confetti

The free time of a user is consistently interrupted by push notifications, email, Instagram, Facebook, etc. It can be difficult to complete a task from start to finish without the visual or auditory trigger of a notification interrupting the user.^{40,41} This constant interruption of someone's free time is called "time confetti," a term coined by Brigid Schulte in her 2010 article for the Washington Post called *The Test of Time*. Here she says:

*Fairly quickly, I discovered that my anxiety is fuelled by the fact that I do very little in chunks of concentrated time. Instead, my days are chopped up like little bits of time confetti. Gathering all those fragments together, I found an average of about 50 hours of work a week, sometimes more, sometimes slightly less. I slept an average of six hours a night. If you count worrying, I spent just about every waking hour multi-tasking.*⁴²

In an article for the *Behavioral Scientist*, Assistant Professor Ashley Whillans from the Negotiation, Organizations & Markets Unit at Harvard Business School, takes this concept of time confetti and applies it to the world of SM and digital technologies. Whillans states that it can be difficult to fully make time for rest or to fully unwind even when free-time is scheduled, as users are repeatedly prodded and triggered to interact with SM instead of staying in the

³⁹ Birkjær and Kaats, "#SortingOutSocialMedia."

⁴⁰ A push notification is pop-up text that appears on a desktop browser, mobile home screen, or on a device notification centre. They can also be referred simply as "notifications."

⁴¹ "What Are Push Notifications?," IBM Cloud Education, IBM, October 18, 2021.

⁴² Ashley Whillans, "Time Confetti and the Broken Promise of Leisure," *Behavioral Scientist*, October 7, 2020.

⁴² Brigid Schulte, "The Test of Time: A Busy Working Mother Tries to Figure out Where All Her Time Is Going," *The Washington Post* (WP Company, January 17, 2010).

present moment. This leaves the user with the impression that they have little free-time.⁴³ One long stretch of free time turns into smaller increments of free time, separated by interrupting notifications, making free time seem shorter, more elusive, and more rare. The graph below illustrates an example of this phenomenon.

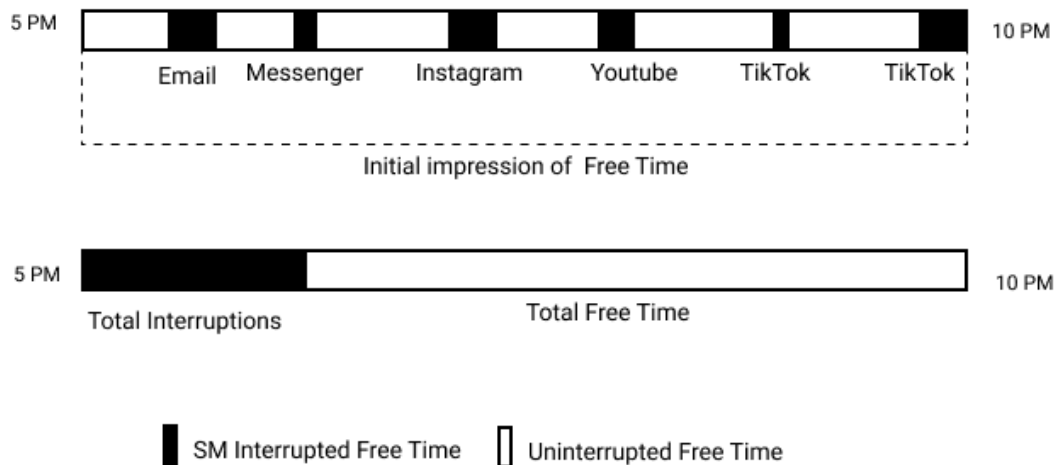


Fig. 7: Time Confetti, Illustrated
Author, 2022

III. User Perception of SM and the Emergence of Digital Detoxes

Users have mixed feelings regarding SM. In a study published by the University of Leicester, teenagers were given the opportunity to express their thoughts and perceptions on the value and effect that SM and the internet had on them. According to the results of this study, teenagers viewed SM as detrimental to their mental health, with the recurrent use of SM often described as “addicting.”⁴⁴ Users are starting to take a step back from spending so much of their

⁴³ Whillans, “Time Confetti and the Broken Promise of Leisure.”

⁴⁴ Michelle O’Reilly et al., “Is Social Media Bad for Mental Health and Wellbeing? Exploring the Perspectives of Adolescents,” *Clinical Child Psychology and Psychiatry* 23, no. 4 (May 20, 2018): pp. 601-613.

time on SM and are partaking in digital detoxes.⁴⁵ Going on a digital detox means using SM as infrequently as possible, minimizing screen time, and avoiding scrolling through SM platforms.⁴⁶

The British communications regulator Ofcom, found that over half of internet users claim to be addicted to their phones and digital devices, and one-third of them have trouble disconnecting from the online world. Its 2016 Communications Market Report estimates that around 15 million internet users started a digital detox to create a balance between their lives on screen and off screen.⁴⁷

An entire movement around well-being in relation to SM is emerging, prompting digital detoxes and the production of thought pieces on people's experiences with them.⁴⁸ Articles also boast and advertise products and approaches that help users develop more control over their time and how they intentionally choose to spend it. Examples of these articles include: *The 15 Best Tech Detox Products of 2022*, *Your 5 Step Guide to Doing a Digital Detox*, and interestingly, *The Best Places to Unplug in Canada* which included travel destinations where a stable internet connection is difficult to come by.

Mainstream news sources are also publishing content on digital detoxes like the BBC's *How to Take a Digital Detox During the COVID-19 Pandemic*. In this article, Holland describes how she minimized her use of SM to decrease the anxiety she felt by being online so often. Holland's SM break gave her a sense of freedom and control.⁴⁹ These sentiments are also echoed in the Huffington Post article, *People Who Deleted Their Social Media Share What It's Like* by Brittany Wong. In this piece, Wong leverages testimonies from people who went on digital detoxes. Jody, for example, a 40-year-old who left Facebook and Instagram says, "I know I will never look back and think, 'Gosh, I wish I had spent more time on social media.'"⁵⁰ Another user who saw benefits from a digital detox is Tate, a 21-year-old SM user. Tate deleted her Facebook

⁴⁵ Mark Whitehead, "Why People Leave Facebook – and What It Tells Us about the Future of Social Media," *The Conversation*, January 18, 2021.

⁴⁶ Milad Mirbabaie, Stefan Stieglitz, and Julian Marx, "Digital Detox," *Business & Information Systems Engineering* 64, no. 2 (February 22, 2022): pp. 239-246.

⁴⁷ Ofcom, "The Communications Market Report 2016."

⁴⁸ Miriam Quick, "Digital Detox," *BBC Worklife* (BBC, July 22, 2019).

⁴⁹ Mary Holland, "How to Take a Digital Detox during the COVID-19 Pandemic," *BBC Worklife* (BBC, May 17, 2020).

⁵⁰ Brittany Wong, "People Who Deleted Their Social Media Share What It's Like," *HuffPost* (HuffPost, April 20, 2021).

account and found herself moving away from Instagram and TikTok and is instead using Reddit. Tate claims that Reddit does not make her as stressed or pressured as Facebook and TikTok did. Self-help books also detail how individuals can start a digital detox. Titles include: *Digital Detox: Why Taking a Break from Technology Can Improve Your Well-Being* (Schell, 2022), *The Big Activity Book for Digital Detox*, (Reid & Williams, 2020), *Off: Your Digital Detox for a Better Life* (Goodin, 2018), *Stop Staring at Screens!: A Digital Detox for the Whole Family* (Goodin & Griffiths, 2018), *How to Break Up with your Phone* (Price, 2020), and *Digital Minimalism: Choosing a Focused Life in a Noisy World* (Newport, 2020).

One event in particular showed how intertwined modern social lives and modern means of entertainment are with SM, but also the conflicting relationship users seem to have with it. On October 4th 2021, Facebook, Instagram, and WhatsApp shut-down worldwide for seven hours.⁵¹ WinkNews (a Florida based news channel) interviewed mental health counsellor Dr. Alise Bartley to discuss the upsides of the Facebook outage. Bartley explained how users may have benefited from this outage as it gave them some time to unwind. She also expressed that this incident could help users understand how reliant they are on SM on a regular basis, describing it as “an opportunity to step back and say, wait a second, where is Facebook in my life? Where do I want it to be in my life? And am I missing out maybe on relationships?”⁵² Users questioning where the SM platforms fit in their lives seems to be one of the primary reasons why they are going on digital detoxes; they are generally looking for more control over how they spend their time and attention, and are hoping to minimize the harmful effects that SM has on them.

The Litany of the Current State has showcased an array of surface-level problems in relation to SM usage. Numerous recent studies have displayed links between SM usage and negative mental and physical health outcomes, which are especially worrying in younger generations. Additionally, even though free time is not necessary largely reduced, personal perceptions of the free time of SM users is damaged and rendered less effective by the constant and unpredictable nature of push notification interruptions. Finally, a significant amount of SM users are expressing

⁵¹ Raymond Zhong and Adam Satariano, “Facebook’s Apps Went down. The World Saw How Much It Runs on Them,” *The New York Times* (The New York Times, October 5, 2021).

⁵² Amy Oshier, “Facebook, Instagram Outage Cause Some Users to Reassess How They Spend Their Time,” *Wink News*, October 6, 2021.

negative opinions of SM while simultaneously categorizing themselves as addicted. These occurrences have resulted in the emergence of an entire culture based on digital detox, with many users trying to temporarily or permanently quit the SM platforms. The following section, Systemic Causes, focuses on the cases of cause and effect behind these problems. It explores the design practises and revenue streams employed by SMCs, to understand how and why they create the problems presented in the Current State Litany.

The Systemic Causes

What are the systems and structures in place that support the problematic ways companies engage with and retain their users?

Excessive use of SM is detrimental to the well-being of its users. The current revenue streams of some SMCs—notably, Facebook, Twitter, Instagram, and TikTtok—rely on how often their users engage with their products.⁵³ Companies are then obliged to design their SM platforms in a way that encourages excessive SM use, which is referred to as the “Hook Model.”⁵⁴ When companies design their products to be used as frequently as possible, they develop algorithms that track the users’ data in an effort to present them with targeted content.⁵⁵ The personalized nature of the targeted content keeps the users coming back for more. Sometimes, the content presented to their users can be triggering, which can further exacerbate existing traumas and mental health issues.⁵⁶ The following analysis of the Current State Systemic Causes details how the use of SM effects the well-being, attention, and time management of users.

I. The Value Proposition and Revenue Streams

SMCs rely on both direct revenue streams generated by users and indirect revenue streams generated by third parties, such as advertising fees.⁵⁷ Facebook does not rely on direct

⁵³ Markus Eurich et al., “Revenue Streams of Cloud-Based Platforms: Current State and Future Directions,” *AMCIS 2011 Proceedings - All Submissions*, July 8, 2011.

⁵⁴ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 12.

⁵⁵ Arnold Roosendaal, “Facebook Tracks and Traces Everyone: Like This!,” *Tilburg Law School Legal Studies Research Paper Series*, 3 (2011).

⁵⁶ Ana Radovic et al., “Depressed Adolescents’ Positive and Negative Use of Social Media,” *Journal of Adolescence* 55, no. 1 (December 18, 2016): pp. 5-15.

⁵⁷ Eurich et al., “Revenue Streams of Cloud-Based Platforms: Current State and Future Directions.”

revenue streams from every-day users; it instead targets streams from advertisers and marketing professionals.⁵⁸ The same revenue streams are observed in Twitter and Instagram's business models.^{59,60} Advertisers rely on SM platforms to reach potential customers, paying a fee to have their content featured on SM websites and mobile applications.⁶¹ Facebook, Instagram, Twitter, and other digital social platforms also sell analytics and data of their users to third parties such as marketers, advertisers, influencers, and data brokers.⁶² For SMCs that rely on indirect revenue streams, users do not pay a fee to access their accounts. The profitable product is then access to the users and the data they create by engaging with SM platforms and their regular use.⁶³ Generally, companies offer users a platform to connect with one another, and present users with content they appreciate.⁶⁴ Since third parties pay SMCs to access user data and advertise their products, they hold more power than users in how the platforms operate. SMCs that sell data to third parties rely on the Hook Model to keep users engaged with their products and to maximize the reach of advertising.^{65,66}

II. The Hook Model, Algorithms and Targeted Content

The Hook Model is a process that SMCs leverage to encourage users' frequent and recurring involvement with the products and services they offer. It centres around creating consumer habits that prompt them to use the product repeatedly.⁶⁷ Behavioural economist Nir Eyal developed the model and divides it into four separate stages: *trigger*, *action*, *variable reward*, and *investment*. Together these phases create a reinforcing loop (see fig.8).⁶⁸

⁵⁸ Eurich et al., "Revenue Streams of Cloud-Based Platforms: Current State and Future Directions."

⁵⁹ Nathan Reiff, "How Twitter Makes Money: Advertising Comprises the Bulk of Revenue," Investopedia (Investopedia, April 28, 2022).

⁶⁰ Ellen Simon, "How Instagram Makes Money," Investopedia (Investopedia, March 17, 2022).

⁶¹ Amy Shuen, *Web 2.0: A Strategy Guide* (Sebastopol, CA: O'Reilly Media Inc., 2008), xix.

⁶² Knowledge at Wharton Staff, "Your Data Is Shared and Sold... What's Being Done about It?," Knowledge at Wharton (University of Pennsylvania, October 28, 2019).

⁶³ Panagiotis Papadopoulos et al., "If You Are Not Paying for It, You Are the Product," *Proceedings of the 2017 Internet Measurement Conference*, November 1, 2017, pp. 142-156.

⁶⁴ Brad R. Edwards, "9 Reasons Why Social Media Is Actually Good for You," *MUO*, February 25, 2022.

⁶⁵ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 196.

⁶⁶ Papadopoulos et al., "If You Are Not Paying for It, You Are the Product."

⁶⁷ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 36.

⁶⁸ Ibid.

The *trigger* is what initiates a behaviour, it is what prompts the user to use the product; a Facebook push notification is an example of this, when seen it *triggers* the user to pick up their phone. The second phase, *action*, is where the user interacts with the product while expecting a *variable reward*. The *action* phase consists of the user viewing the notification, opening the Facebook mobile application, and then scrolling through content that they are interested in. After having completed the action, the user is then presented with a *variable reward*, which is the third phase of the Hook Model. The *variable reward* is simply a positive reinforcer that encourages the user to repeat or continue their previous *action*. In the case of the Facebook notification example, the *variable reward* could be finding an interesting event to attend with friends, or receiving a like on a post they had previously shared on the platform. This positive reinforcer then encourages the user to *invest* their time, attention, and finances in the product. In the case of the Facebook example, the user scrolls through the content of their Facebook mobile application looking for another *trigger*. The cycle then repeats itself, installing the habit of retuning to consult Facebook.⁶⁹

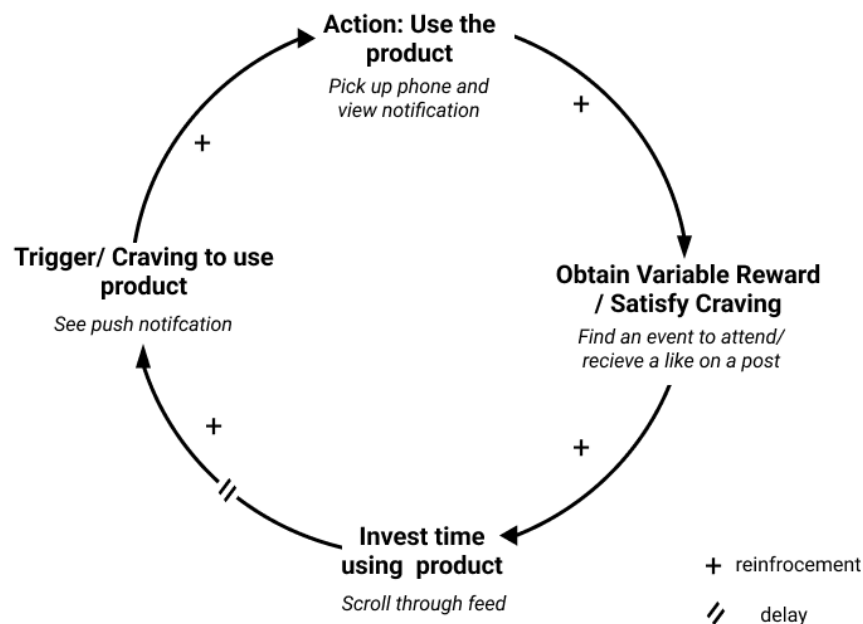


Fig.8: The Hook Model
Author, 2022

⁶⁹ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 154-162.

To keep presenting the users with triggers and content that interests them, SMCs track the data of their users. The type of content users engage with and respond to is analyzed by the algorithms deployed by SMCs such as Facebook.⁷⁰ Algorithms can then allow SMCs to showcase even more content that is of interest to their users. The more users spend time on an SM platform, the more data can be analyzed by the algorithms, and the more targeted content the user receives. The success of the algorithm relies on user engagement. The data analyzed by the algorithms can then be sold to third parties to advertise content and better understand potential customers.⁷¹ As a result of the data harvesting mechanism, users are beginning to lose trust with SMCs and what these organizations do with their data.⁷²

In his book, Eyal acknowledges the dangers of the Hook Model stating, “building habit forming products is a super power. If used irresponsibly, bad habits can quickly degenerate into mindless, zombielike addictions.”⁷³ Bad SM habits often result in users mindlessly scrolling through content for hours on end instead of being in the present moment with friends and family.⁷⁴ Another bad habit that can present itself is that users become conditioned to check notifications on their devices while performing tasks that require high levels of attention like driving.⁷⁵ The bad habits that are generated as a result of the Hook Model can be the reason why so many users feel addicted to their mobile devices, and thus partake in digital detoxes.⁷⁶

It is interesting to observe how the Hook Model follows a similar structure to an addiction and habit loop as detailed by the American Addiction Center.⁷⁷ In an addiction loop, the *trigger* is in fact the craving of the addictive behaviour or substance. The person then gives into the craving, satisfying and then further investing in their addiction. The resemblance between the

⁷⁰ Roosendaal, “Facebook Tracks and Traces Everyone: Like This!”

⁷¹ Papadopoulos et al., “If You Are Not Paying for It, You Are the Product.”

⁷² Ariel Edwards-Levy, “Most Facebook Users Don't Trust the Site with Their Data,” *HuffPost* (HuffPost, December 28, 2018).

⁷³ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 11.

⁷⁴ Nir Eyal, *Indistractable: How to Control Your Attention and Choose Your Life* (Dallas, TX: BenBella Books, Inc., 2019), 999999999.

⁷⁵ Carina Wolff, “11 Social Media Habits That Can Be Bad for Your Health,” *Bustle* (Bustle, July 25, 2016).

⁷⁶ Brittany Wong, “People Who Deleted Their Social Media Share What It's Like.”

⁷⁷ Judson Brewer, “Is Mindfulness an Emerging Treatment for Addiction?,” American Addiction Centers, November 4, 2019.

Hook Model and the addiction/habit loop could also explain why some users refer to themselves as addicted to their phones.⁷⁸

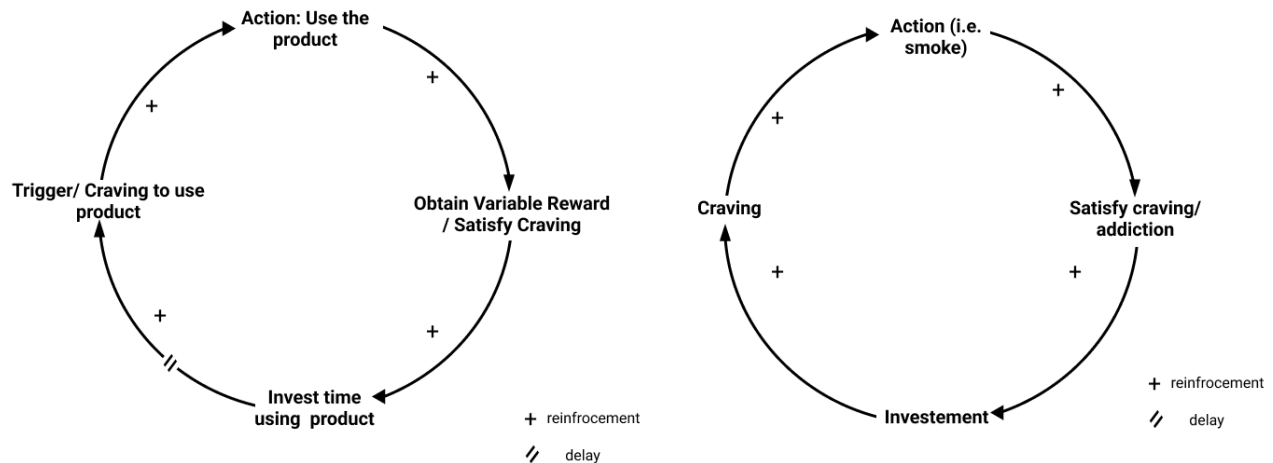


Fig.9: The Hook Model (left) and an Addiction Loop (right)
Author, 2022

III. Triggering Content

Simply put, targeted content aims to present the user with content that they find interesting. However, it is possible for targeted content to be triggering for some, such as content that may elicit intense or damaging emotional reactions like being reminded of a certain trauma, creating reclusive, or otherwise self-harmful behaviours. Triggering content is especially important to moderate for the sake of individuals who are going through a vulnerable period of their life or who have unresolved trauma.⁷⁹

In an article for the Huffington Post, Rachel Moss interviews women who have recently experienced miscarriages and are struggling with fertility issues. These women often receive targeted advertisements regarding pregnancy and baby products. Carly-May, an interviewee for the article says, “I hate the assumption that all women want to see these adverts, or would benefit

⁷⁸ O’Reilly et al., “Is Social Media Bad for Mental Health and Wellbeing? Exploring the Perspectives of Adolescents.”

⁷⁹ Radovic et al., “Depressed Adolescents' Positive and Negative Use of Social Media.”

from seeing them.”⁸⁰ Algorithms seem to sometimes miss the mark in presenting content to the users that could be of value to them, as Annie, another interviewee, mentions in the article, “unfortunately the algorithm that worked out we were pregnant wasn’t able to work out that we weren’t anymore.”⁸¹ There is an option that should allow users to limit certain types of targeted content. When an advertisement appears on a user’s timeline, the user has the option to “hide” it, and then explain why they are choosing to do so in a short poll. Options in the poll include “I find this offensive” and “I think this is irrelevant.” Instagram also lets users opt out of seeing similar posts. However, the result of these options do not seem to be optimal.

*It broke my heart the day I went through my timeline and clicked on every single baby and pregnancy advert, selected ‘I don’t want to see this’ and then chose my reason as ‘it’s irrelevant.’ Despite doing this, for the next few weeks the adverts kept appearing and each time it was like a punch right in the stomach.*⁸²

In the case of pregnancy ads, there is an option on Facebook that limits their appearance on a user’s feed, but users do not always know of its existence. As Moss mentions, “the option isn’t easy to find and neither Annie or Melissa knew it existed until speaking to us for this article.”⁸³ When SM platforms expose users to triggering content, they become harmful to the users’ mental well-being. Consequently, triggering content can damage the perception a user might have regarding an SM platform and associate it with negative emotions and mental states.⁸⁴

In summary, the Systemic Causes perpetuating the problems highlighted in the Litany can be attributed to SM design and SMC revenue streams. While the users do certainly hold some accountability for the manner in which they interact with SM, their agency is reduced by SM design, which intentionally manipulates user behaviour and consumption. In essence, SMC business models currently rely on indirect revenue streams from data brokers and advertisers. More eyes and clicks on SM platforms translates to more profit. The Hook Model employed by SMCs

⁸⁰ Rachel Moss, “‘My World Is Very Dark Right Now’: What It’s like to Be Targeted by Baby Ads after Miscarriage,” *HuffPost UK* (HuffPost UK, September 29, 2019).

⁸¹ Ibid.

⁸² Ibid.

⁸³ Rachel Moss, “‘My World Is Very Dark Right Now’: What It’s like to Be Targeted by Baby Ads after Miscarriage.”

⁸⁴ Radovic et al., “Depressed Adolescents’ Positive and Negative Use of Social Media.”

ensures high levels of user interaction with SM platforms, and is fundamentally an addiction loop. The well-being of SM users is relegated to be secondary to the needs of advertisers and data brokers. This relegation of user importance is directly related to the perpetuation of the Current State Litany. The following two sections of the paper, the Worldview, and Myths and Metaphors, examine the cultural norms that allow this type of design practice and revenue streams to be accepted by society.

The Worldview

What are the paradigms and mental models that sustain these systems? How is the current status quo of the world perpetuating these issues?

After identifying the Systemic Causes behind how and why SM can effect the well-being, attention, and time management of users, a wider look is required to understand what is currently sustaining these systems. Two major paradigms are clear, FOMO (the Fear Of Missing Out) and capitalism.

I. Fear of Missing Out (FOMO)

FOMO is a fear of regret, which may manifest as an obsessive worry of missing out on social interactions, new experiences, valuable investments, or any other satisfying experience. Around 56% of SM users experience FOMO. Research has shown that FOMO might originate from discontent and lack of satisfaction with one's life, which drives users to increase their use of SM in order to stay informed about their interests and the world around them.⁸⁵ The consistently updated nature of digital content fuels FOMO and pushes users to excessively consult their devices. The Hook Model drives these constant content updates. Advertisers and content creators leverage this fear as a marketing strategy to have users return to SM platforms.⁸⁶ In other words, FOMO builds on the dread of making incorrect choices. Users rely on SM to see what is currently going on in the world and within their social groups and networks. When pre-

⁸⁵ Marina Milyavskaya et al., "Fear of Missing out: Prevalence, Dynamics, and Consequences of Experiencing FOMO," *Motivation and Emotion* 42, no. 5 (March 17, 2018): pp. 725-737.

⁸⁶ Chris Hodkinson, "'Fear of Missing out' (FOMO) Marketing Appeals: A Conceptual Model," *Journal of Marketing Communications* 25, no. 1 (October 5, 2016): pp. 65-88.

sented with something that seems more enjoyable than what they are currently doing, they start envisioning the different ways they could be spending their time. FOMO diminishes the perceived quality of the time the user is not spending partaking in certain experiences. It perpetuates the feeling of dissatisfaction with whatever the user is currently doing. The user then values their time less than they did before the experience. The perception that the way users are spending their time is not satisfying enough is harmful to their mental health and general well-being.⁸⁷

II. Capitalism, Productivity, and Profit

The attention economy is essentially a form of digital capitalism, with SMCs competing for capital in the market of a user's time. Users are consuming content when performing tasks not generally associated with entertainment, such as going to bed, commuting, eating, etc., and are passively engaging with SM mobile applications.⁸⁸ Users are giving away their data to SMCs, which then sell it to advertisers and data brokers. Essentially, SMCs profit from their users and the ongoing search for profit showcases the capitalist nature of the SM value proposition and revenue streams. The underlying aspects of society that allows a culture of FOMO (or otherwise a culture ashamed of 'doing nothing') and a culture obsessed with productivity and content consumption to be accepted by society is explored in the following section of the Current State CLA, Myths and Metaphors.

Myths and Metaphors

What are the root causes behind the tumultuous relationship between users and social media?

What narratives and beliefs perpetuate the problem?

In a world where attention and time are crucial for profit, it is clear that the old saying of *time is money* can be applied. The Hook Model pushes users to spend time engaging on SM platforms, even to the detriment of their mental and physical well-being.⁸⁹ In the meantime, SMCs make use of algorithms to populate the time a user spends on SM with targeted content and ad-

⁸⁷ Milyavskaya et al., "Fear of Missing out: Prevalence, Dynamics, and Consequences of Experiencing FOMO."

⁸⁸ Andrew Brasington, "Social Media Influences Our Organic Rhythms in the Context of Neoliberal Capitalism," *The Owl* 11, no. 1 (January 23, 2021): pp. 29-37.

⁸⁹ Eyal, *Indistractable: How to Control Your Attention and Choose Your Life*, 42.

vertisements.⁹⁰ This creates a financial incentive for companies to keep their users coming back to the product. With the concept of *time is money* acting as a backbone for SMCs to keep their users engaged, the idea of idle time and leisure becomes taboo, and users often find themselves in a situation with leisure time where they feel the need to be occupied or entertained.⁹¹ Doing nothing becomes “an act of political resistance to the attention economy” as it contradicts the notion that time and life need to be optimized and monetized.⁹²

Current State CLA in Brief

The essence of the Current State CLA is not complicated. SMC revenue streams rely on constant increases to user engagement, which in turn encourages SMCs to increase engagement at all costs, even by intentionally manipulating the attentions of users. This manipulation for the sake of increased profit has resulted in a wave of negative downstream effects not only for users, but for society in general. While this type of SMC profiteering is not explicitly demonized or forbidden by society, it is sufficiently reviled to the point where SMCs feel the need to operate behind closed doors. This, in turn, results in the emergence of whistleblowers, journalistic scrutiny, and negative perceptions by users in general. As a whole, this system is perpetuated by the nature of business in society, which has insured that ‘time is money’ is no longer just an idiom, but an actual reality for SMCs and how they operate. The common business model for SMCs does not encourage ethical behaviour from corporate citizens.

This being said, not all is lost. As will be explored in the following section, there are opportunities and hints at a better path forward that exist within Current State, and in the sections after, a realistic and more responsible path forward for SMCs and SM in general is explored.

⁹⁰ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 7-12.

⁹¹ Jenny Odell, *How to Do Nothing: Resisting the Attention Economy* (Brooklyn, NY: Melville House Publishing, 2019), 15.

⁹² Ibid, xi.

Opportunities in the Current State

Although SM consumption does have its drawbacks in regard to time management and mental health, as detailed in the CLA analysis of the Current State, the benefits that SM can have on users and larger communities cannot be dismissed. Digital platforms can serve as a tool for community building and making connections.⁹³ As explained in the following section, the rise of the online digital neighbourhood is a testimony to how SM can foster genuine, honest, and supportive connections. It is also interesting to see new digital products and features that foster a healthier relationship with users make their way into the market, and explore user generated revenue streams.

I. The Virtual Neighbourhood: A Tool for Community Building, Peer Support, and Connection

Some users are looking for a slower way to consume media and to be connected with people who share their values. This type of engagement can be found in online communities called “virtual neighbourhoods.”⁹⁴ They provide “a welcome lifeline for millions of isolated people around the world.”⁹⁵

In an interview titled *I Want to Be in the Crowd With Everyone*, Rachel Nyguen, an SM influencer and creator who has been on YouTube for over a decade, shared her experience with virtual neighbourhoods.⁹⁶ In 2019, she launched an online community for her and her YouTube viewers. The community, dubbed *Warde* and housed on Slack, has over six thousand members. It is a community-moderated online space. The Slack group houses channels for topics such as food, beauty, fashion, well-being, academia, and more. In her interview, Nguyen mentions that consuming content via *Warde* on Slack is healthier, slower, and less pressing for her. She states that she does not feel as if she is in a rush to catch up on the latest news. She, along with the

⁹³ The role and utilization of SM in the social justice movement has already been extensively studied elsewhere and lies outside of the scope of this paper. However is it pertinent to mention the importance that these tools have played in social movements and revolutions such as #metoo, #blacklivesmatter and the Arab Spring.

⁹⁴ It is important to note the presence of virtual neighbourhoods and online communities that perpetuate harmful discourse, like QAnon. However the study of these communities is beyond the scope of this research.

⁹⁵ Danielle Murinas, “Virtual Neighbourhoods: The Power of Online Communities: Redbrick Comment,” Redbrick (University of Birmingham, April 7, 2020).

⁹⁶ Evan Nicole Brown, “I Want to Be in the Crowd with Everyone,” *The New York Times* (The New York Times, March 30, 2021).

thousands of members, foster a healthy online community, one where members share similar values and support one another.⁹⁷

Online neighbourhoods can also bring people looking for peer support together. *Momstown*, an online community for young mothers who feel isolated, is a Canadian website launched in 2007 by three mothers in southern Ontario. Its goal is to bring mothers together, online and offline. The website houses a discussion forum and a 24-hour messaging service where members can connect with one another. The community also hosts around 20 in person events per month across the 20 regional communities it supports. One member described Momstown as a space where she can continue to “be inspired and find common ground.”⁹⁸

Other notable virtual neighbourhoods include, *Internations* (a website that connects expats all around the world), *Remote POC* (an online Slack community where people of colour support each other in their professional endeavours), and the *Hot Young Widows Club* (a Facebook group, no longer active, that connected widows and widowers together to support one another as they progressed through their grief after the loss a partner).

II. The Emergence of Minimalistic Technologies and Social Platforms

Minimally digital and ‘slow technology’ products are beginning to enter the market. Their aim is to provide users with tech that is less intrusive to user time and attention, while maintaining the practical aspects of a digital product such as portability and reliability.

An example of a minimal technology product is *Loftie*, an alarm clock that looks to replace the smart phone alarm in an effort to minimize screen time before bed and in the morning. *Loftie*’s campaign states “the world is a stressful place, your bedroom doesn't have to be.”⁹⁹ The photo sharing mobile application *Dispo* is also a good example of a minimal tech product. *Dispo* borrows elements from Instagram and disposable cameras. It allows users to share digital ‘film rolls’ that take 24-hours to appear on a user’s profile.¹⁰⁰ The artificial 24-hour wait period

⁹⁷ Brown, “‘I Want to Be in the Crowd with Everyone’.” *The New York Times*.

⁹⁸ Bronwen L. Valtchanov et al., “Neighborhood at Your Fingertips: Transforming Community Online through a Canadian Social Networking Site for Mothers,” *Gender, Technology and Development* 18, no. 2 (May 22, 2014): pp. 187-217.

⁹⁹ “Break up with Your Smartphone Alarm,” Loftie, 2021.

¹⁰⁰ Taylor Lorenz, “Are Disposables the Future of Photo Sharing?,” *The New York Times* (The New York Times, February 25, 2021).

for photos to appear removes the instant gratification element of more traditional SM platforms like Instagram. The wait feature encourages users to “live in the moment while maintaining the digital practicality of social media.”¹⁰¹ And finally, the anti-iPhone phone, *The Light Phone* is a product “designed to be used as little as possible,” the product page reads:

*It will never have social media, clickbait news, email, an internet browser, or any other anxiety-inducing infinite feed. It's an experience [called] going light. It's a phone, it calls and texts. There is a customizable menu of simple tools, and a dashboard website to manage everything. There is a headphone jack, bluetooth, and it can be used as a personal hotspot.*¹⁰²

The Lite Phone aims to give space and time for stress free technology, where leisurely time remains uninterrupted. The brand outwardly rejects data driven revenue streams and the attention economy by offering users an alternative, one where they have the option to ‘disconnect,’ be it for a weekend or for good.

III. Apple’ Introduction of Customizable Time, Data, Notification Management Features, and HTTP Cookies

The trend of taking a step back from digital products and SM is not limited to its users. Product developers are also being sensitized to this trend. In 2018, Apple released the Screen Time monitoring feature on the iPhone.¹⁰³ Screen Time gives the user the option to set a time limit for certain mobile applications. More recently, Apple introduced a feature that allows the user to limit the tracking of their engagement on select mobile applications.¹⁰⁴ The ask-not-to-track feature disrupts the data gathering process necessary for digital platforms to generate targeted content for their users. In 2021, Apple also introduced a new feature called Focus Mode, which gives the user opportunity to create different statuses on their iPhone. The feature “helps

¹⁰¹ “Dispo - Live in the Moment,” Apple App Store (Dispo Inc., December 21, 2019).

¹⁰² “Light Phone” (The Light Phone, Inc., n.d.).

¹⁰³ “iOS 12 Introduces New Features to Reduce Interruptions and Manage Screen Time,” Apple Newsroom (Apple Inc., June 4, 2018).

¹⁰⁴ Alex Hern, “Apple iOS 14.5 Update Includes 'App Tracking Transparency' Feature,” *The Guardian* (Guardian News and Media, April 27, 2021).

users focus and be in the moment with new ways to manage notifications.”¹⁰⁵ With Focus Modes, users are able to manage and control what push notifications appear on their device screen. For example, a work Focus Mode can be customized to allow for phone calls and text messages from certain individuals to go through on the phone’s notification centre, but push notifications from SM applications are not displayed. A personal Focus Mode can disable the email push notifications, but enables push notifications from SM platforms. Apple’s development of Screen Time, ask-not-to-track, and Focus Mode features gives users more control over their time, and also allows them to spend their time with more intention. This could foster a healthier relationship between users and their digital product.

Apple’s ask-not-to-track feature is comparable to the cookies pop-up on some websites, which gives users the opportunity to opt in or out of data tracking. HTTP cookies, or internet cookies, are used by web browsers to monitor, customize, and store user session data. A “session” is just the time spent on a site. Cookies let new websites recognize users. If the user visits a website again, the web browser sends a cookie to the web server to identify the user and present them with targeted content.¹⁰⁶ Currently, users are given more control over what kind of data they choose to share with cookie related pop-up notifications on certain websites.

IV. Patreon: User Generated Revenue Streams

Patreon is a digital platform funded by its users, it allows content creators and artists to be funded by their supporters and fans via a monthly subscription fee, with the subscribers being referred to as *patrons*. Creatives then give their patrons access to exclusive content, and sometimes include them in decisions regarding the content being produced. Including patrons in the creative process allows them to gain more ownership of the content. The direct-revenue stream from the subscription fee is enough for the platform to minimize its dependence on advertisements.¹⁰⁷ One such producer that uses Patreon is Hannah Witton, a YouTube content creator who focuses on sexual health and relationships. She offers her patrons exclusive content depending on

¹⁰⁵ “iOS 15 Brings Powerful New Features to Stay Connected, Focus, Explore, and More,” Apple Newsroom (Apple Inc., June 7, 2021).

¹⁰⁶ “What Are Cookies?,” Kaspersky (AO Kaspersky Lab, February 9, 2022).

¹⁰⁷ Eric Peckham, “The Business of Patreon,” *TechCrunch* (TechCrunch, March 29, 2021).

how much users pledge (how much they pay per month to support her on Patreon). Having an income that is directly funded by users allows Witton create content that is necessary and informative, but not always profitable on YouTube.¹⁰⁸ Patreon democratizes the web as patrons play an active role in what content gets produced and financed.

Virtual neighbourhoods, products that utilize a more curated approach to tech, customizable features, and user generated revenue streams present alternative ways that SM and digital platforms could operate and financially sustain themselves. Together, these trends signal a shift in the way users engage with SM and how content can be created, shared, and financed. They hint at opportunities where SM platforms and networks can be centred around their users.

The four opportunities listed in this section hint at the inevitable shift to SM mentioned in this paper's introduction. Between the emergence of minimal tech products, the growing popularity of smaller and more intimate digital communities, Apple's introduction of tools to counter data collection, and the constant growth of alternate user funded SM platforms, it is clear that SM users are actively seeking alternatives to the current SMC giants. Additionally, the California Assembly Bill 2408 and various other backlashes resulting from the revelations of Frances Haugen, illustrate that governmental bodies are more than willing to legislate these Current State problems away if SMCs are unwilling to initiate change on their own. These new trends are simultaneously showing that while drastic change from SMCs is inherently needed and wanted, it certainly is not necessary to rebuild these platforms from the ground up. The Ideal Future State explored in the following section will use the discoveries from all four layers of the Current State CLA to inform a possible future. This following CLA, beginning with the Myths and Metaphors layer, shows that alternatives to the Hook Model and indirect revenue streams are possible for large SMCs, and that they even present opportunities for increased profit if adopted.

¹⁰⁸ *My Revenue Streams as an Online Content Creator (Pie Charts!!), YouTube* (Hannah Witton, 2021).

Causal Layered Analysis: The Ideal Future State

Live in the Moment

To define what the ideal relationship between users and SM products could look like, the CLA tool is used. The four different levels of the CLA (Myths and Metaphors, Worldview, Systemic Causes, and the Litany) help build this Ideal Future State, also referred to as *Live in the Moment*. The Three Horizons Framework in the section after the *Live in the Moment* scenario explores an attainable transitory future that will help push the realities of SM usage and SMC behaviour in the direction of this Ideal Future State. The Ideal Future State CLA starts with defining what the Myths and Metaphors layer looks like, and its analysis presents an answer to the following question, what is the driving force that will catalyze SMCs to alter their products in a way that is less harmful to their users? The three following layers of the CLA analysis will answer these questions:

The Worldview: How does a new Worldview pave a path for the ideal future and cause a paradigm shift? What mental models and approaches aid in the creation of SM platforms that are better for their users' well-being and that do not monetize their time?

The Systemic Causes: What new system structures support this new social media/user relationship?

The Litany: What does the new social media/user dynamic look like on a day to day basis?

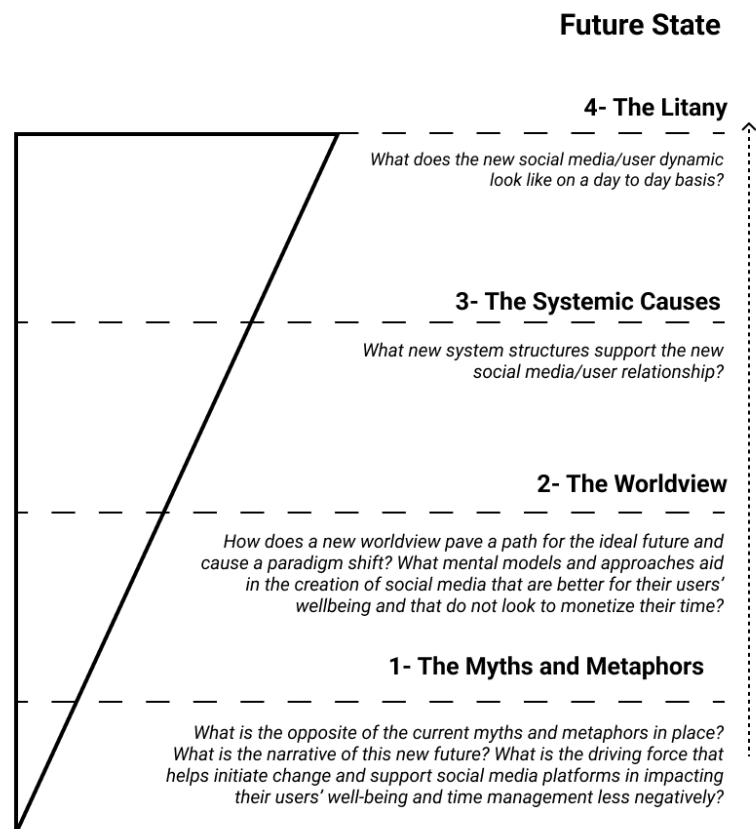


Fig.10: The Layers of the Future State CLA
Author, 2022

Myths and Metaphors:

What is the opposite of the current Myths and Metaphors in place? What is the narrative of this new future? What is the driving force that helps initiate and support SM platforms in impacting their users' well-being and time management less negatively?

Living in the moment and practicing empathy is diametrically opposed to the driving force behind SM design and its current consumption resulting from the notion that time is money. The mindful practice of being in the present moment allows people to limit what they are influenced by, and allows them to minimize distractions. This driving force can be linked to the practice of mindfulness which is based on allocating one's time and attention intentionally.¹⁰⁹ This practice is founded on the principles of Zen and Tibetan meditation.¹¹⁰ Clinical psychologists and mental health experts have created a number of mindfulness-based therapy techniques aimed at assisting those suffering from psychological illness and distress, such as depression and anxiety.¹¹¹ When a person is mindful of their thoughts, their feelings, and their surroundings, they are less likely to be influenced by external stimuli. Currently, the force behind the design of SM drives the user to mindlessly consume content. With the reinforcing loop of the Hook Model guiding the design and business models of SMCs, there is little room for users to be fully present and practice mindfulness.¹¹² SM is not designed in a way that fosters intentional time and attention management.¹¹³ Companies can explore ways to give space for users to practice mindfulness so they can use their products with more intention. This approach requires empathy, as it allows company executives and designers to step into the users' reality and explore opportunities to better serve them with their products.¹¹⁴

¹⁰⁹ "Mindfulness Definition: What Is Mindfulness," *Greater Good Magazine* (University of California, Berkeley, April 29, 2022).

¹¹⁰ Marc Kreidler, "The Mindfulness Movement," *Skeptical Inquirer* (Committee for Skeptical Inquiry, May 1, 2017).

¹¹¹ William Van Gordon et al., "There Is Only One Mindfulness: Why Science and Buddhism Need to Work Together," *Mindfulness* 6, no. 1 (December 20, 2014): pp. 49-56.

¹¹² Kanokporn Sriwilai and Peerayuth Charoensukmongkol, "Face It, Don't Facebook It: Impacts of Social Media Addiction on Mindfulness, Coping Strategies and the Consequence on Emotional Exhaustion," *Stress and Health* 32, no. 4 (March 30, 2015): pp. 427-434.

¹¹³ Eyal and Hoover, *Hooked: How to Build Habit-Forming Products*, 135-137.

¹¹⁴ Merlijn Kouprie and Froukje Sleeswijk Visser, "A Framework for Empathy in Design: Stepping into and out of the User's Life," *Journal of Engineering Design* 20, no. 5 (October 1, 2009): pp. 437-448.

The Worldview

How does a new Worldview pave a path for the ideal future and cause a paradigm shift? What mental models and approaches aid in the creation of SM that is better for users' well-being and that does not look to monetize their time?

The Worldview layer of the Ideal Future State presents an alternative mental model to that of the Current State. In the Current State, FOMO, SMCs' willingness to trade users' health for economic growth, and users' desire to be constantly productive and consuming content are foundational to the harmful effects that SM has on its users. Shifting away from the Current State Worldview, the alternative Worldview presents two concepts that shape the Ideal Future. The first idea, the idea of doing nothing, is in the hands of users. While it is important to note that SMCs currently try and succeed at influencing users' behaviour, users should be encouraged to not mindlessly engage with the content on the internet.¹¹⁵ The second is the concept that SMCs should adopt a Human Centred Design approach when developing products, as opposed to the current profit-driven design approach to SM and digital technologies.

I. Doing Nothing and JOMO

To shift away from the "Fear of Missing Out" trope and the need to be constantly productive, Jenny Odell, artist and educator at Stanford University, suggests that doing nothing is an effective strategy for resisting profit-driven technologies. For her, doing nothing is based on the intention of ceasing engagement with the online world in favour of re-engaging with the environment. Her book, titled *How to do Nothing: Resisting the Attention Economy* (2020) opposes the conventional conceptions of productivity and invites the reader to seek connections with local communities. During the 2020 commencement ceremony of Harvard University's Graduate School of Design, Odell addressed the graduating class by stating "my saying no [to distraction] was a small but firm insistence on my need for time and reflection... it can almost be hard to believe that you continue to exist when you're not producing or publicly saying anything. But you do."¹¹⁶ Giving importance, value, and intention to time spent offline is one way to put FOMO

¹¹⁵ Odell, *How to Do Nothing: Resisting the Attention Economy*, 12.

¹¹⁶ Jenny Odell, *Inhabiting the Negative Space* (Harvard University Graduate School of Design and Sternberg Press, 2021), 19.

aside and be more intentional with the allocation of attention. When the fear of missing out is tuned out, users can experience the Joy Of Missing Out. JOMO is a state of mind that opposes FOMO. It is about learning to tune out the background noise of “could have, should have, and did not.”¹¹⁷ When users practice JOMO, they are in fact valuing human relationships, being mindful with their time, and taking SM breaks when they feel the need. Rather than continuously attempting to keep up with the Joneses, JOMO enables users to be in the present moment, which is key to contentment and satisfaction. In the *Live in the Moment* scenario, SMCs rely less on behaviour modifying algorithms to drive engagement, and return some decision making agency back to the users. This allows users time to practice JOMO, take a break, and engage in mindful SM consumption. SMCs can achieve this by leveraging the principles of Human Centred Design, an approach explored in the following section.

II. Human Centred Design:

Human Centred Design (HCD) puts the well-being and the overall experience of users at the heart of design decisions, with a creative approach to solving problems. HCD begins with understanding how users are impacted by a particular challenge area. The Interaction Design Foundation states that HCD “considers the whole user experience,” with the end result being a solution, product, or service that meets their needs. Practicing HCD is effective at building empathy towards users, and consequently better serves them. In the Ideal Future State scenario, SMCs leverage the principles of HCD to understand the pain points their users have in regard to SM, and then uses these findings to inform how SM and digital products are designed. In this process, designers can look at how SM impacts the user holistically, instead of solely focusing on the immediate interaction between the user and their product. The HCD approach values the well-being of the user and centres it as the foundation of the product’s value proposition. SMCs can then provide users with a more positive experience, without the downside of negatively effecting their mental health.

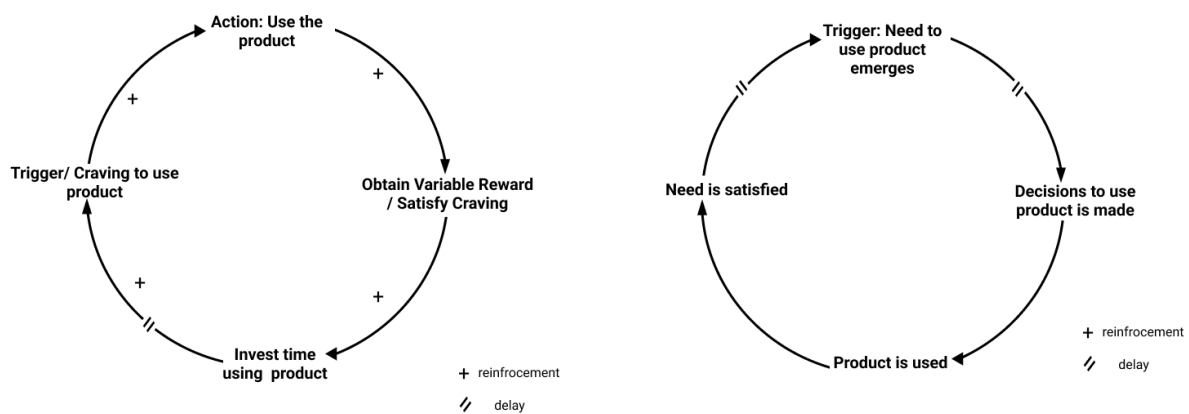
Not adopting these proposals puts SMCs at risk of change initiated from outside their boardrooms. Furthermore, roughly 45% of users are considering leaving Facebook, with 32%,

¹¹⁷ Kristen Fuller, “Jomo: The Joy of Missing Out,” *Psychology Today* (Sussex Publishers, July 26, 2018).

29%, and 22% considering leaving Twitter, TikTok, and Instagram respectively.¹¹⁸ As explored in the introduction, regulatory bodies are currently in the process of forcing changes after SMCs initial failure to do so. Additionally, as detailed in the section titled Moving Forward: A Three Horizon approach, there is a financial incentive for SMCs to focus on user well-being, and to consider it a key aspect of their offerings.

The Systemic Causes:

What new system structures support this new social media/user relationship?



*Fig.11: The Hook Model (left) and The Alternate Model (right)
Author, 2022*

The Current State analysis showed that the Hook Model fuels the mindless consumption of SM. This model is based on a reinforcing feedback loop, a person gets used to the product, and then uses it out of habit. The Hook Model is why SM companies rely on user engagement to ensure that their revenue streams remain profitable. The Ideal Future State adopts a different system to ensure profit for these companies. The alternative system relies on the approach of Human

¹¹⁸ “U.S. Social Users Who Considered Leaving Select Social Networks 2020,” *Statista* (Statista Research Department, April 4, 2022).

Centred Design to ensure user trust and satisfaction, and gives the user time to intentionally use SM, as opposed to having that action be a result of forced habituation. To better illustrate this, the Hook Model and the alternative model are presented side by side (see fig.11).

The causal loop diagram is no longer a simple reinforcing feedback loop like the Hook Model. The proposed system introduces two delays: one between the *trigger* and the decision to use the product, and the other between the *satisfaction phase* and the *trigger* to use the product again. The proposed model offers the user time to reflect and decide if they want to use SM. The difference in language between both loops is important to note; the loop illustrating the Hook Model employs the word *craving*, and the proposed model employs the word *need*. The distinction between both words is key to fully understanding the nuance between both models. A craving refers to “an intense, urgent, or abnormal desire or longing for something,” while a need is a “necessary duty,” and “a condition requiring supply or relief.”¹¹⁹ The proposed model suggests that SMCs respond to user needs, as opposed to creating user cravings for their products. This reduces the addictive effect of SM. In the Ideal Future State, the user has the time to mindfully decide if they want to use SM, and engaging with SM is no longer propelled from a craving or habituation to do so.

The Litany:

What does the new social media/user dynamic look like on a day to day basis?

Since the proposed system does not mirror an addiction loop, SM is not associated with negative connotations and the feeling of constant craving. This change in perception could increase user trust as it poses less negative impacts on their well-being. In this scenario, user trust is what brings users back to the product and is an added layer to the value proposition of SM. Trust can influence purchasing behaviour in users.¹²⁰ When users trust a product, they are then more likely to pay for it. The Ideal Future State proposes an SM ecosystem that is funded directly by the users via donations or subscription fees. This eliminates (or at the very least minimizes) the need for SMCs to push targeted content onto its users, to gather their data, and to sell that

¹¹⁹ “Craving Definition & Meaning,” and “Need Definition & Meaning,” *Merriam-Webster* (Merriam-Webster, n.d.).

¹²⁰ “Brand Trust Is Becoming More Important: Here Are Some Key Stats and Themes,” *Marketing Charts* (Marketing Charts, July 10, 2019).

data to third parties like marketers, brands, and data brokers. Users are viewed as product owners and partners with the SMCs. With a user funded stream of income, SMCs are more receptive to their users' needs, so they spend more time designing ways to better the overall user experience, instead of spending that time answering to third party data brokers and advertisers (see fig. 12).

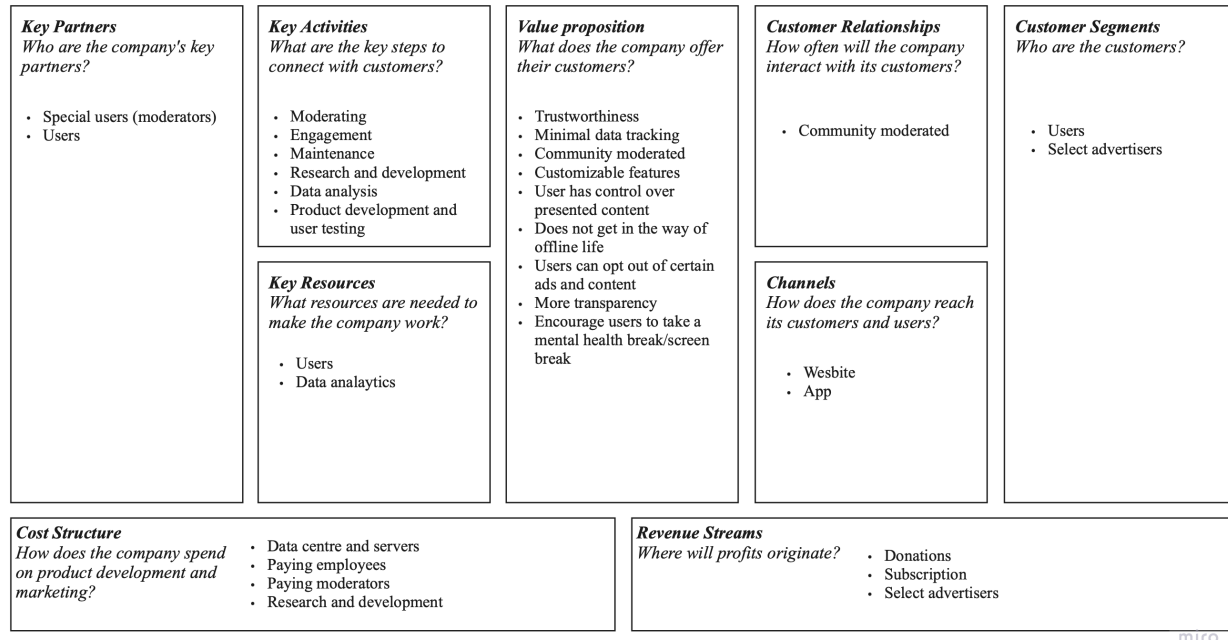


Fig.12: An SMC's Business Model Canvas in the Ideal State "Live in the Moment" (Alternative BMC)
 Author, 2022

With users as the primary funders, the focus of company executives and designers shifts to user well-being. In this scenario, user testing and user research is not limited to questions exclusively regarding a user's direct and immediate experience with an SM product. User testing takes more time, and includes questions that can allow the designers to target how the digital product makes the user feel in the long term. Examples of these questions include: Do you (the user) feel like the product takes away from your time and focus? Do you associate this product with any negative feelings or thoughts? How is this product impacting you on a day-to-day basis?

The needs and expectations of people differ from one person to another. Some users might rely on SM features that others do not. This is where customizable features can be an important asset and addition to the value proposition of SM products. Features could include: limiting the appearance of a certain topic on a user's SM feed (opting out of seeing content that is triggering), customizing what information is displayed on a notification or how many notifications a user receives per hour, and opting in or out of sharing their data with the platform they are using or with third parties. If algorithms are used more sparingly, then targeted content becomes less frequent; the user then becomes less susceptible to developing an addictive relationship with these digital platforms. Users are given the opportunity to utilize SM more mindfully and intentionally which has been proven to be beneficial for users' well-being.¹²¹ Mindful SM use can help avoid and minimize feelings of burnout or mental exhaustion. The idea that SM can benefit users is also explored in the previously mentioned study by the Nordic Council of Ministers. The researchers found that SM is actually beneficial for those who use it with the purpose to connect with others and to find volunteering opportunities.¹²² In the Ideal Future State CLA, SMCs leverage this angle of their products to better serve their users and offer them an experience that is beneficial to their personal growth and well-being. SM platforms give time and room for users to make a choice as to when and how they utilize these digital communication channels. Using SM is no longer done out of habit or a need for distraction, but instead, SM is used out of thoughtful intention, with a need for making genuine connections and for adding value to a user's time.

The Ideal Future State is a world where the control over SM content and levels of engagement are in the hands of the users. This fosters a healthier relationship between users and SM, digital platforms, and digital content. Users are given control over the content that they see, and they can block triggering content and anything that does not serve them. They can opt out of sharing their data with tech companies, and that decision is respected. The terms and conditions that a user must agree to before making use of a digital product have less jargon, are shorter, and are easier to understand. Users can also choose how often content is updated on their devices, as

¹²¹ Peerayuth Charoensukmongkol, "Mindful Facebooking: The Moderating Role of Mindfulness on the Relationship between Social Media Use Intensity at Work and Burnout," *Journal of Health Psychology* 21, no. 9 (February 13, 2015): pp. 1966-1980.

¹²² Birkjær and Kaats, "#SortingOutSocialMedia."

a way to mitigate the fear of missing out, and can thus practice digital consumption more mindfully, with more control over their time and attention.

Ideal Future State CLA in Brief

Building an Ideal Future State CLA from the new Myths and Metaphors layer is certainly far removed from the common realities and practices of today. Living in the moment and practicing mindful consumption is an ideal future worth striving for. SMCs that base their products on that concept would be praiseworthy. This being said, an ideal future is just that—idealistic. The following section, the Three Horizons Framework, works to tie in the lessons from the Current State CLA, the ideal futurities from the Ideal Future State CLA, and the Opportunities in the Current State, to create a transitory future that is not only attainable, but practical and beneficial to users and SMCs alike.

Moving Forward: A Three Horizons Approach

What recommendations and strategies can help users take more ownership over their time and attention? How can SM companies support their users in this endeavour? Why should SMCs support their users?

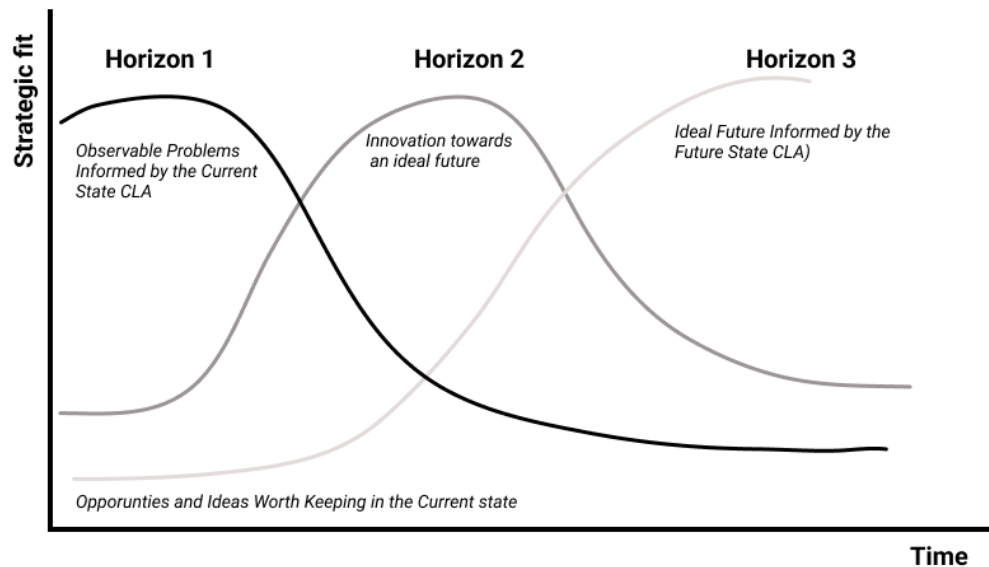


Fig.13: The Three Horizon Framework and its Relations to the CLA
Author, 2022

With the foundations of the Ideal Future State (H3) now established, and the Current State problem and opportunities identified (H1), actionable recommendations to better the Current State can be explored (H2). The application of the Three Horizons foresight tool is utilized to explore tangible and actionable recommendations that support a shift from the Current State (*Time is Money*) to the future state (*Live in the Moment*) in Horizon 2. Horizon 1 was explored by examining the current issues in the CLA analysis, and the opportunities signalling change that are manifesting themselves presently (virtual neighbourhoods, user funded revenue streams, customizable features on mobile applications, etc). Horizon 3 was explored by building the Ideal Future State, and developing an understanding of what an ideal relationship between users and SM can look like (SM platforms are designed by looking at user well-being holistically rather

than being solely profit driven). H2 outlines a roadmap to go forward by raising the following questions: How is a transition between H1 and H3 possible? Which ideas and tactics may assist users in assuming more control over their time and attention? What role can SMCs play in assisting their users with this endeavour? Why should SMCs assist their customers?

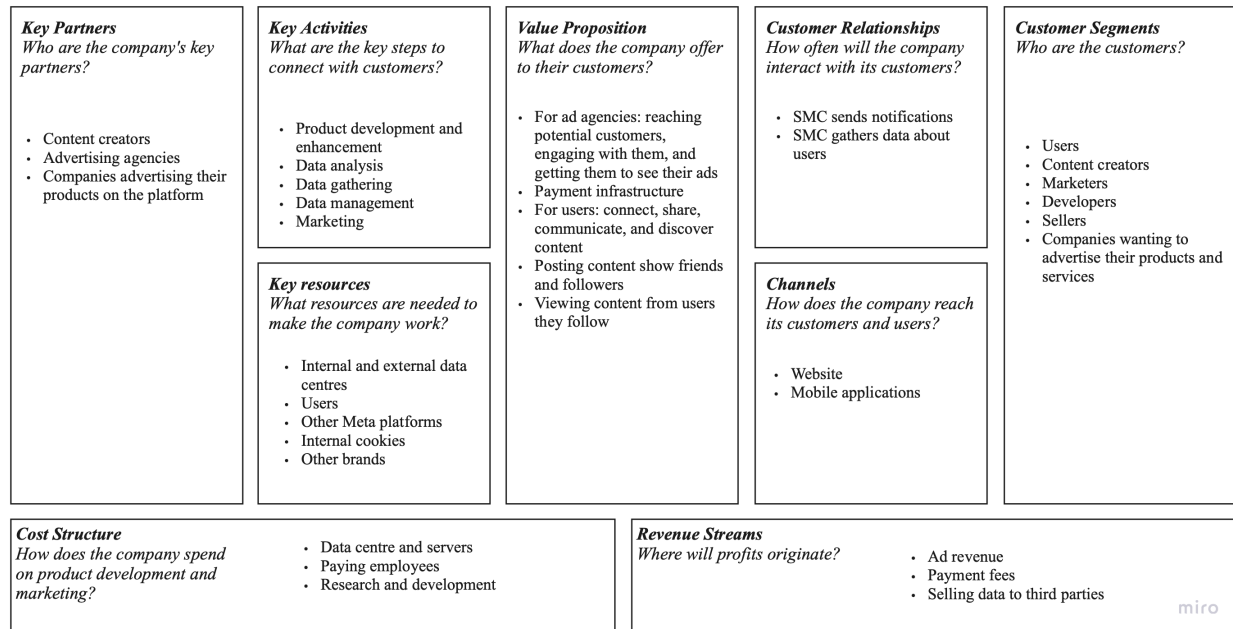


Fig.14 Common Elements of the BMCs of Instagram, Facebook and TikTok
 Author, 2022

The most important question to answer here is why SMCs should assist their users by implementing these changes. The business model perpetuating the problems examined within the Current State Litany remains massively profitable (see fig 14). This being said, there is a direct line that can be drawn from the Hook Model used by SMCs today to much of the considerable social unrest felt across the globe. This line is now easy to trace, but it required numerous studies as well as the revelations of a whistleblower in order to make the relationships between SMCs and unrest clear.

As examined in the Current State Litany earlier in this paper, the current SMC business models rely on constant and ever increasing user engagement in order to maintain revenue growth. In order to maintain this growth, SMCs have conducted internal studies exploring what

types of algorithms result in the highest user engagement.¹²³ The findings of the internal studies coincide with those of external studies; the type of content that receives the most engagement involves negative affective language and an ‘us versus them’ rhetoric.¹²⁴ In order to maximize user engagement, content on SM platforms is often presented to the user out of chronological order, with the content most likely to be engaged with presented first. This is also the content that is the most inflammatory.¹²⁵ Simply put, it is currently more profitable to keep users addicted, unhappy, and constantly ‘doomscrolling,’ than it is to ensure that users are happy.

This has created a massive amount of negative downstream effects. In the United Kingdom, 13.5% of teen girls who use Instagram say that suicidal thoughts became more frequent after using the platform.¹²⁶ Another leaked internal study shows that 17% of teen girls who use Instagram have a worsening of their eating disorders.¹²⁷ 32% of teen girls who feel bad about their bodies say those feelings became worse after using Instagram.¹²⁸ Also leaked, a presentation given to Mark Zuckerberg and other Meta executives claimed that internal studies show that Instagram worsens body image issues in 1 of 3 teen girls.¹²⁹

The direct downstream damage of current SMC practices goes well beyond the screens and minds of the average user and teenagers. Due to the work of journalists and whistleblowers, it is now public information that the military in Myanmar used Facebook as a tool to spread propaganda and encourage ethnic cleaning. This government based propaganda program lasted for over five years.¹³⁰ When Facebook was publicly chastised for its involvement, it took minimal efforts to remove high profile public accounts. Later leaked internal documents show that Facebook was aware of the way its platform was being used in Myanmar from the beginning.¹³¹ This same narrative seems to be repeating itself today in Ethiopia. Facebook whistle blower Frances

¹²³ Slotnik, “Whistle-Blower Unites Democrats and Republicans in Calling for Regulation of Facebook.”

¹²⁴ Rathje, et al., “Out-Group Animosity Drives Engagement on Social Media.”

¹²⁵ Slotnik, “Whistle-Blower Unites Democrats and Republicans in Calling for Regulation of Facebook.”

¹²⁶ Allyn, “Here Are 4 Key Points from the Facebook Whistleblower's Testimony on Capitol Hill.”

¹²⁷ Ibid.

¹²⁸ Allyn, “Here Are 4 Key Points from the Facebook Whistleblower's Testimony on Capitol Hill.”

¹²⁹ Terry Gross and Jeff Horwitz, “What Leaked Internal Documents Reveal about the Damage Facebook Has Caused,” *NPR* (National Public Radio, September 23, 2021).

¹³⁰ Paul Mozur, “A Genocide Incited on Facebook, with Posts from Myanmar's Military,” *The New York Times* (The New York Times, October 15, 2018).

¹³¹ Allyn, “Here Are 4 Key Points from the Facebook Whistleblower's Testimony on Capitol Hill.”

Haugen said the platform is “literally fanning ethnic violence,” and that “...without action, divisive and extremist behaviors we see today are only the beginning.”¹³² In one recent example, members of an ethnic minority in a small Ethiopian village were falsely accused of kidnapping in a Facebook post. After one day and considerable user engagement with the post (which contained negative affective language and ‘us versus them’ terminology, as mentioned by the SM engagement study earlier in this paper), the village was ransacked, burned, and all of the inhabitants were executed. Despite many reports for violations, the post remained live for weeks.¹³³ Facebook is still operating, with minimal changes and no real consequence, in Myanmar and Ethiopia.

Because of the information leaked by Haugen, it is public knowledge that Facebook was aware of these abuses on the platform, but decided to take no action in order to protect company profits.¹³⁴ Because it is so easy to trace the direct line between SMCs’ business models and these negative downstream effects, users are now less trusting of SMCs than ever before.¹³⁵ Furthermore, governments are beginning to take action, creating legislation that directly effects the profit margins of SMCs by curtailing their behaviour. These are precisely the reasons why SMCs should consider adopting alternative revenue streams, such as those presented in this paper.

SMCs still have an opportunity to make their own changes rather than have changes imposed on them from the outside. Realistically, SMCs will have better opportunities to safeguard their profits and revenue streams if they choose to initiate change on their own. SMCs can rely less on engagement and modification of user behaviour and mental well-being for profit by diversifying their revenue streams. Currently, due to reliance on data brokers and advertisers, more eyes and clicks directly equates to more profit. This reliance on selling data though, after the analysis in this paper, does not seem to be a sustainable path forward, and direct revenue streams are not out of the question.

¹³² Akinwotu, “Facebook’s Role in Myanmar and Ethiopia under New Scrutiny.”

¹³³ Lee Hale and Eyder Peralta, “Social Media Misinformation Stokes a Worsening Civil War in Ethiopia,” *NPR* (National Public Radio, October 15, 2021).

¹³⁴ Slotnik, “Whistle-Blower Unites Democrats and Republicans in Calling for Regulation of Facebook.”

¹³⁵ Julie Ray, “Young People Rely on Social Media, but Don’t Trust It,” *Gallup.com* (Gallup, November 22, 2021).

SM platforms funded directly by users are becoming more and more popular, and due to the lack of advertising and targeted content, they seem to be favoured among those who can afford them. YouTube Premium is an excellent example of this. While YouTube has experimented with subscription models for some time now, its most recent subscription model of YouTube Premium seems to be the most successful and beloved. The most important benefit of the subscription is that users no longer see advertisements. As of January 2021, there were roughly 50 million subscribers to YouTube Premium, paying 11.99 USD per monthly subscription. Importantly, that count is an increase of 20 million subscribers from the year before.¹³⁶ Patreon is another excellent example of an SMC directly funded by users. As of January 2020, the platform had six million monthly subscribers willingly paying fees to roughly 150 thousand creators. That number is an increase of four million subscribers over three years, and roughly 125 thousand creators over four years.¹³⁷

If large SMCs adopted an optional subscription based model, they could lessen their reliance on indirect revenue and data sharing. This would give users the option to opt out of ads and targeted content. Furthermore, if SMCs were receiving revenue directly from subscribed users, it would no longer be necessary to present subscribers with inflammatory and negative content most likely to drive engagement metrics for advertisers. In essence, subscribers would be purchasing freedom from advertisements, and more importantly, they would be paying to directly augment their mental and physical well-being.

Best yet, this optional subscription model provides an opportunity to increase revenue for SMCs. In the following few paragraphs, Facebook is used as an example to illustrate how a subscription option could not only augment its revenue, but also earn more trust from users and lessen the downstream negative effects of SM on society. As of the first quarter of 2022, Facebook had approximately 1.9 billion active monthly users worldwide. On average, a worldwide Facebook user generates 3.18 USD in revenue for Facebook per month.¹³⁸ If Facebook were to adopt an optional subscription model where each subscription costs 25% more than the indirect

¹³⁶ Mitchell Clark, “YouTube Reports Having 50 Million Premium and Music Subscribers,” *The Verge* (The Verge, September 2, 2021).

¹³⁷ Brian Dean, “Patreon: Subscriber and Creator Statistics for 2022,” *Backlinko* (Semrush Inc, January 6, 2022).

¹³⁸ “Facebook: Average Revenue per User Region 2022,” *Statista* (Statista Research Department, April 28, 2022).

revenue of a worldwide user per month (3.975 USD in total), Facebook could then offer an affordable option that could allow its users remove themselves from the advertiser and data broker economies, and lessen their participation in the attention economy.

If just 1% of the average worldwide Facebook users were to adopt this model, it would generate an additional 15 million dollars per month in direct revenue (see fig. 15). Subscription based models have already proven themselves to be successful on platforms such as YouTube Premium and Patreon, who have seen steady annual increases in subscribers since their inception. Since users have already strongly voiced their discontent at being forced into the data economy, this could be a viable and affordable option for them to opt into a new model. While most users will not initially, or perhaps ever, adopt the subscription model, the option to exit the data economy could sooth many fears held by users. Furthermore, the additional revenue this creates for Facebook could lessen its reliance on data brokers and advertisers. This type of direct revenue is likely to grow steadily, increasing profits over time, while simultaneously lessening damage to society and growing user trust. In other words, Facebook has the opportunity to increase revenue while no longer relying solely on increased engagement.

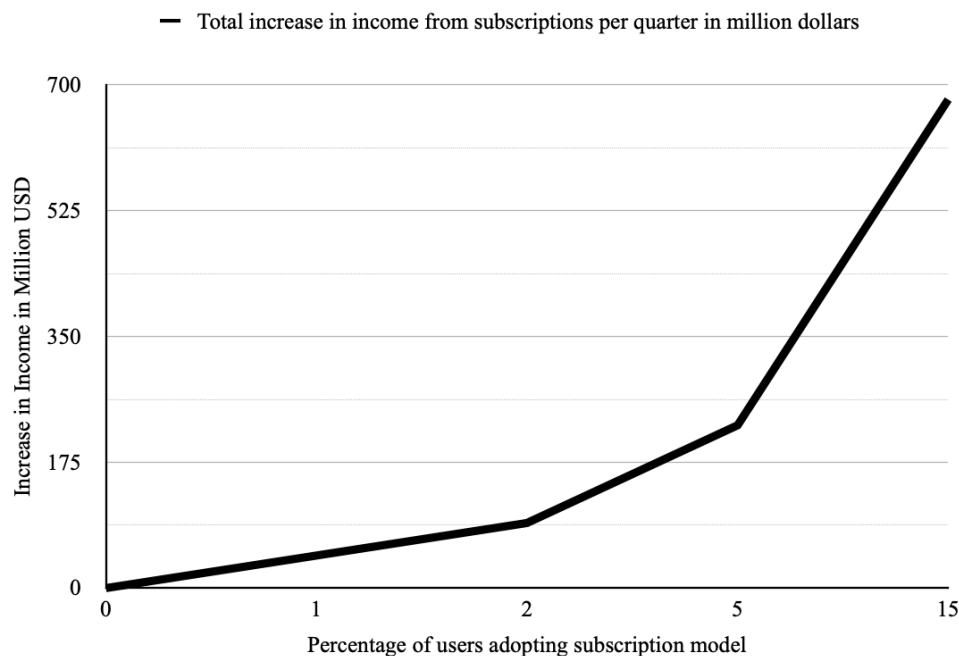


Fig.15: Graph of Facebook's Increase of Income with Proposed Subscription Model
Author, 2022

This direct revenue recommendation aims to reconcile company profits with user needs. In the H2 scenario, SM is profitable without necessarily being addicting. SMCs ensure repeat customers by building and maintaining user trust, as opposed to encouraging users to develop harmful habits when using their products. Here, SMCs could avoid or lessen the effects of impending legislation and lawsuits by offering an alternative model that relies less on harmful data-driven systems. The user experience becomes more pleasant, which then has a positive effect on the user's perception of SM. This section of the research explores possibilities and recommendations that could be undertaken by SMCs to develop practices in which they can support their users's well-being, and ultimately provide them with a holistically positive experience when using their products, all while increasing SM platform profitability. For this model to be successful, SMCs must, at a minimum, adopt recommendations one and two below. Ideally, they should adopt all seven.

Recommendation I: Exploring Alternative Revenue Streams

Instead of being mostly reliant on data harvesting and selling, companies can look to revenue streams that are directly funded by users. Users can opt into donating or paying the SMC a monthly fee. In return, users are not presented with targeted ads and have more control over their data and privacy. This recommendation helps product users become product owners, and potentially have more say in how their platforms change and take shape in the future. With a revenue stream that directly relies on users, SMCs can minimize their financial dependence on third parties like advertisers and data brokers.

Recommendation II: Respecting Data Sharing Preferences

Customizable cookies and Apple's ask-not-to-track feature allow users to gain more control over their data and online trail. This recommendation takes inspiration from these two instances and suggests that SMCs take on a similar approach with their mobile applications by asking users what kind of data they do not wish to share, and what kind of data they do not mind

sharing. One user might allow the tracking of health related data on mobile applications, and another may not. Both have the option to opt in or out of sharing depending on their comfort levels. Essentially, this recommendation looks to give users more ownership and control over their data. With this recommendation, it is possible to increase user trust in regard to SMCs because currently, the question of data and privacy causes concern for users.¹³⁹

Recommendation III: Asking Users About their Well-Being in Regard to the Product in User Testing and Research

When engaging users in user testing, designers and researchers can ask questions pertaining to the overall well-being of the user when they interact with the digital product. Designers are encouraged to ask users questions that go beyond the users' immediate experience with the product, focusing on how the digital product influences the users' well-being. Designers can also ask users for suggestions as to how they can ensure the product is not only easy to navigate, but also helpful, useful, and supportive to the users. These prompts can include questions such as: Do you see any way in which the product could be harmful to your well-being? Are there any customizable features you would like to see? How can we make sure the product supports you and your personal goals? Do you have any complaints about the product as a whole? What more do you need from this product? Questions that target the user's experience more holistically assist designers in developing empathy in regard to their users; designers better serve their users when they understand them.

Recommendation IV: Mix and Match

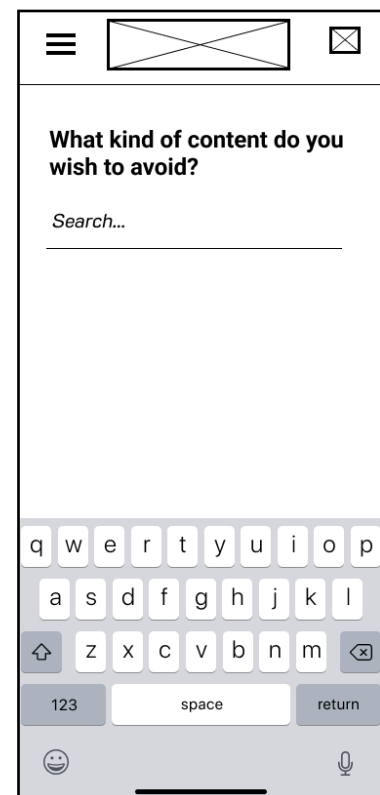
The Ideal Future State scenario of *Live in the Moment* explored the idea of allowing users to mindfully and intentionally use SM instead of solely relying on triggers. The intentional use of digital products is currently ensured with the addition of some customizable features on phones and mobile applications, like the Focus Mode feature or the Screen Time application on Apple products. The *Mix and Match* recommendation aims to give the user more control over their

¹³⁹ Lance Whitney et al., "Data Privacy Is a Growing Concern for More Consumers," TechRepublic, August 17, 2021.

products. Here, users can *mix* their update and notification preferences to *match* their individual needs. In this recommendation, users get to control how often content on their SM feed is updated to encourage slower content consumption. For example, Instagram users could configure the application to update content every two hours, as opposed to instantaneously. This gives users the option to consume content at a slower pace. Users can also choose between being presented with targeted content generated by algorithms, or to be exclusively presented with content that they follow. Taking inspiration from Apple’s Focus Mode, this recommendation gives users the option to embed and create different statuses on their digital mobile devices or their SM applications. Users can toggle between the different statuses depending on what kind of content or notifications they want to receive. For example, users can create an at-work status where they choose to disable any notifications or calls from friends or family. Alternatively, they can also create a with-friends status, that would disable any alerts from the work related accounts on their phone.

Recommendation V: Limiting the Appearance of Triggering Content

In order to avoid triggering content on SM, platforms can add a “trigger feature.” This could look like a prompting question that SM websites present to their users when accessing their accounts. It allows users to answer to the following question, “what kind of content do wish to avoid?” Users can then input a list of topics that they do not wish to be exposed to on the platform. This feature would be accessible via the user settings page and can be edited whenever the users wish to make changes to their list of triggers. This addition will allow SM websites to be more in tune with the needs of their users. For example, couples or individuals who have recently gone through a miscarriage can preemptively set their preferences in the trigger feature and avoid having any baby or pregnancy related content presented to them on their SM

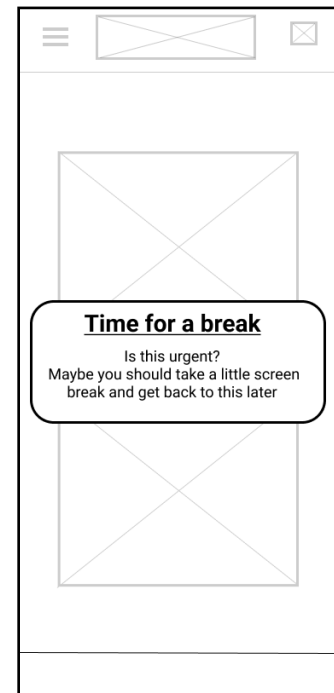


*Fig.16: A Low Fidelity Wireframe of a Trigger Sorting Page
Author, 2022*

feed. This omission of triggering content on users' feeds can minimize the negative feelings that certain users might have while scrolling through SM.

Recommendation VI: Enabling “Mental Health” Breaks for Screen Time

Apple's Screen Time is a feature that allows users to monitor how much time they spend on their phone and on mobile applications. Users can consult the application to check their usage and how it changes over time, and implement screen time restrictions on certain mobile applications. It would be useful to add a mental health screen break option to the existing Screen Time feature, prompting users to step away from the screen. In addition, users can also schedule a screen break from using their device in this application. The aim here is to allow users to be more mindful about how they are spending their time. SM platforms can also embed regular posts that encourage users to take some time off screen and focus on their mental health.



*Fig.17: A Low Fidelity Wireframe of a Screen Break Notification
Author, 2022*

Recommendation VII: Supporting Virtual Neighbourhoods and Community Moderation

Platforms can look into designing more ways to support virtual neighbourhoods and online communities. This could include financial support or technical support for users in charge of moderating the conversation and content in their neighbourhoods. Supportive community moderation is one way to ensure a healthier internet and SM experience for users.¹⁴⁰ Moderators are often volunteers and take time out of their day to make sure that the members in the virtual neighbourhoods are being respectful to one another and that they abide by community guidelines and regulations.¹⁴¹ They are key players in ensuring that online spaces remain pleasant. Their

¹⁴⁰ U. Matzat and G. Rooks, “Styles of Moderation in Online Health and Support Communities: An Experimental Comparison of Their Acceptance and Effectiveness,” *Computers in Human Behavior* 36 (2014): pp. 65-75.

¹⁴¹ J. Nathan Matias, “The Civic Labor of Volunteer Moderators Online,” *Social Media + Society* 5, no. 2 (June 2019).

current volunteer status makes it so that they do not receive any financial compensation for their emotional and civil labour. This recommendation suggests that moderators become recognized assets in online communities by SMC executives, and that they receive some sort of monetary compensation for their work. The compensation could be sourced from payments from the members of the online communities or from the SMCs themselves.

Ultimately, the aim of these recommendations is to give control of time and attention back to the users, and to make users partners in the creation and maintenance of digital products. Users are thus seen as decision makers, partners, and supporters of these platforms, rather than just the product. With these additions, SMCs cater better to their users, increasing their customer satisfaction rates, and the trust users have in their products without comprising their financial motives.

Continuations

A comprehensive qualitative analysis of data and research was undertaken to tackle the topic thoroughly, despite time limitations and the ever changing reality of the internet and digital products. The recommendations in this report can be further explored to validate their efficacy with the following tactics:

I. User Interviews and Testing

Guided by the principles of Human Centred Design, user interviews and testing could help fine tune the implementation of the report's recommendations. Users could help designers prioritize what ideas should be rolled out first. A user testing pool could also help flag any discrepancies or weaknesses in the design of new products and features.

II. Quantitative Research:

Quantitative research regarding SM, user well-being, and time management could add another layer of information to answer the problem statement, further supporting the recommendations in this report.

III. Financial Research:

The recommendations to help users foster a healthier relationship with SM involves the introduction and adoption of new revenue streams. Studying the financial viability of the different revenue streams will help inform SMCs on how to adopt and implement new business models and profit sources.

Conclusion

SM and the internet are embedded in the daily lives of their users. Some fear SM, and others appreciate its benefits of connection and its access to readily available information. Both the benefits and the downsides of SM and digital platforms hold true. Notable disadvantages include the negative impacts these products have on user well-being, but users are becoming more aware, in tune, and sensitive to where and how they spend their time and attention. Some feel their time is being wasted behind a screen, scrolling through SM, sometimes even complaining that this excessive unconscious intake of digital content is harmful to their mental and physical health. This created and is continuing to expand a trending exodus from SM under the banner of digital detox.

With exhaustion from the excessive amounts of content online, smaller online communities are emerging. Their content is updated at a slower pace, and they foster a more supportive environment for their members. All of these changes fall in line with the general discontent that certain users have in regard to the biggest SMCs, notably those owned by Meta (Facebook and Instagram), TikTok, and Twitter. The current business model of these companies profit off the success of an addiction loop dubbed the Hook Model. The findings of this research paper illustrate that solely relying on the Hook Model is not a sustainable path forward for SMCs. Due to the downstream effects of this model, individual, societal, and governmental pushback is beginning to manifest. With these negative effects in mind, large SMCs should question the way they operate to better serve their users and society as whole. For that, SMCs should adopt an approach that puts the well-being of the user and respect of their time and attention at the centre of their concerns, designs, and planning—all while creating opportunities for more profit.

Beyond being more ethical, SMCs should look at an approach that is more empathetic to users, and aim to add value to their time as opposed to take from it in the name of profit. Users need to be included in future design processes, and be encouraged to give their opinion on how their use of a digital product affects them. Adopting a Human Centred Design approach to the ongoing development of social media products can ensure that digital products at large are positively impacting their users.

Appendix A: Three Horizon Analysis

Horizon 1: Time is Money

What is the Current State of the issue? How are people consuming social media and why is it problematic?

- SMCs are viewed as untrustworthy, manipulative, addicting, and profit focused as opposed to user focused.
- The Hook Model is a reinforcing loop that SM products are designed around.
- The time and attention of users is surrendered to social media and digital platforms.
- SMCs profit from the attention economy.
- Notifications and other triggers contribute to the phenomenon of time confetti.
- Targeted content and ads are harmful to users' mental health.
- Users are diminished to mere data by SMCs.
- SMCs' approach to handling data is informed by consumerist and capitalist.
- SMCs only offer limited user privacy and data control.
- Users experience digital fatigue and feel disconnected from their surroundings.
- Users feel shamed if they do not engage with SM regularly.
- Users have no control or knowledge over their data.
- Digital detoxes are becoming more popular among users.

What opportunities and ideas are signalling a shift in the status quo?

- Mental health experts claim that less screen time is beneficial.
- Smaller online communities are emerging and they create more intimate connections between members.
- Self moderated communities are emerging in digital neighbourhoods.
- Minimal tech products such as the *Lite Phone* and *Loftie* are emerging.
- Features such as Apple's Screen Time and Focus Modes are entering mainstream distribution and enabling users to feel more in control of their content and consumption.
- The option to limit targeted ads and data harvesting via freemium or donation based business models are becoming more common.

Horizon 3: Live in the Moment

What does the ideal state look like? What does a world where users feel more ownership over their time and attention in regard to social media look like?

- SM and digital content is designed to be mindfully consumed.
- SMCs adopt a user centred approach to designing SM that takes into account happiness and overall satisfaction.
- SMCs take responsibility for the effects that their products have on users' well-being.
- SMCs rely less on targeted ads to ensure profit and adopt user funded revenue streams.
- Users have the choice to opt in or out of sharing their data with SMCs.
- SMC platforms feature user customizable notifications and content refresh rates.

Horizon 2: Reconciling Company Profits and User Needs

How can a transition between Horizon 1 and Horizon 3 occur? What recommendations and strategies can help users take more ownership over their time and attention? How can social media companies support their users in this endeavour? Why should companies support their users?

- The use of minimalistic tech products becomes the norm.
- Time management tools and features that allow the user to control their attention and their time become imbedded in more digital products.
- Policies concerning the use of user data are more transparent.
- SMCs give more options for users to control how and if they share their data with the companies.
- SMC platforms feature user customizable notifications and content refresh rates.
- Digital neighbourhoods become a more mainstream medium to consume, create, and share data online.
- Freemium and donation based SMC business models become more common.
- SMCs adopt a Human Centred Design approach that focuses on the well-being of users.

Appendix B: Business Model Canvas and Value Proposition Canvas Analysis

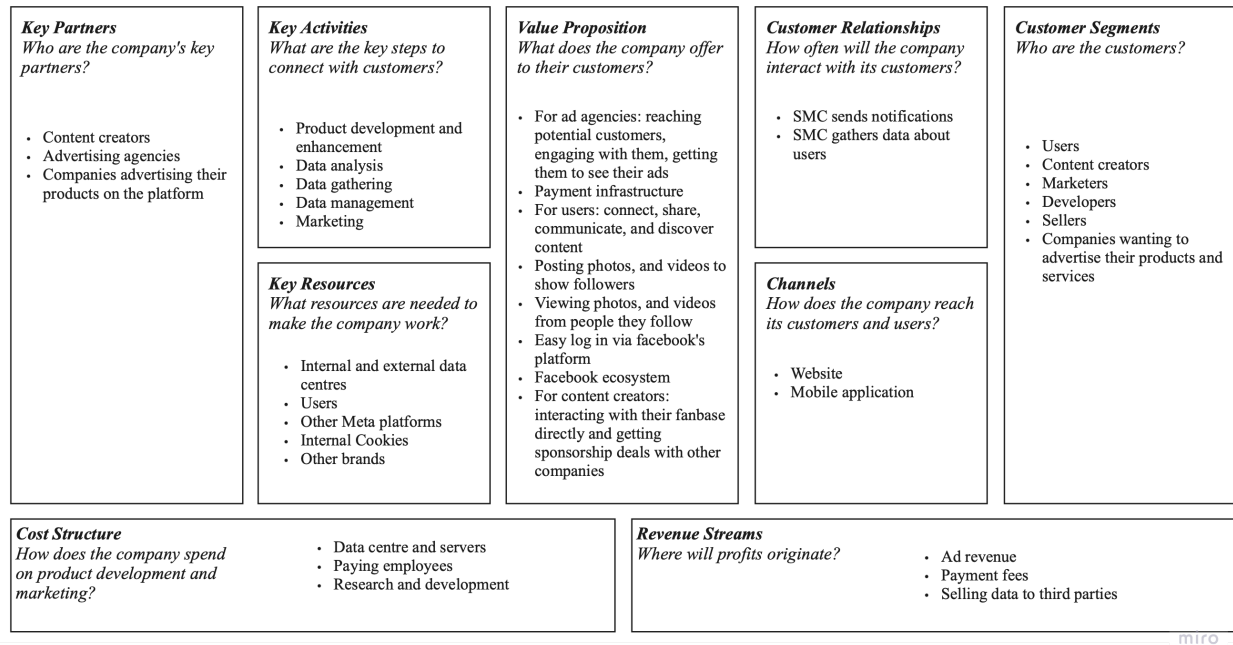


Fig.18: Instagram's Business Model Canvas
Author, 2022

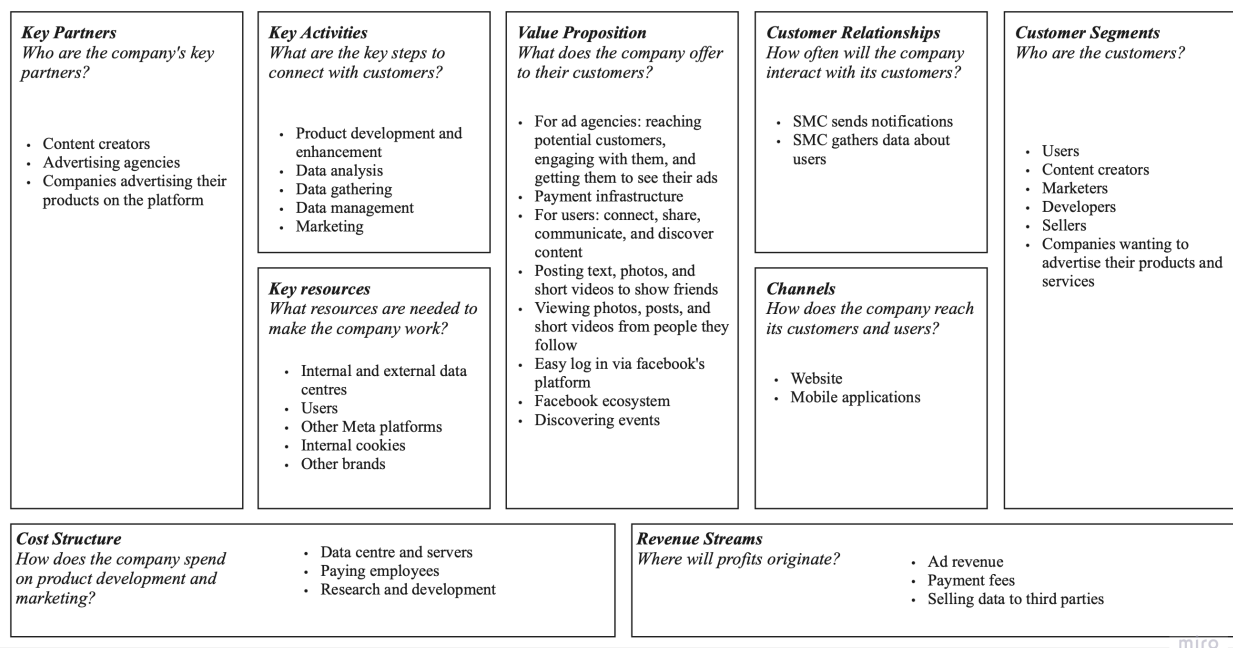


Fig.19: Facebook's Business Model Canvas
Author, 2022

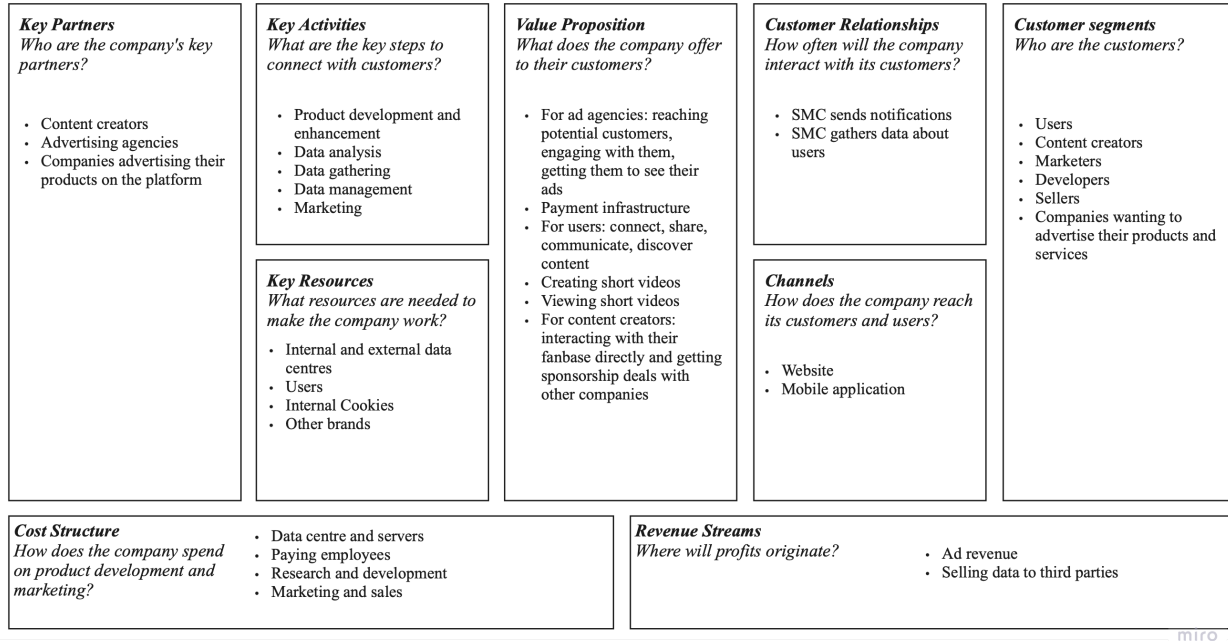


Fig.20: TikTok's Business Model Canvas
Author, 2022

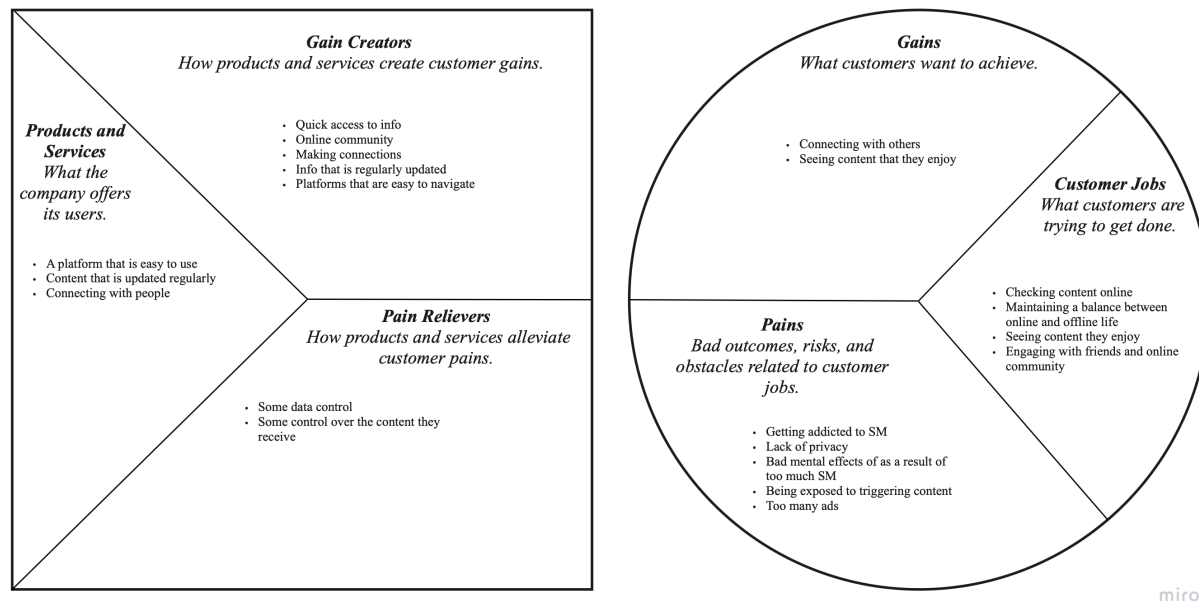


Fig.21: Common Elements of the Value Proposition Canvas of Instagram, Facebook and TikTok in relation to their users
Author, 2022

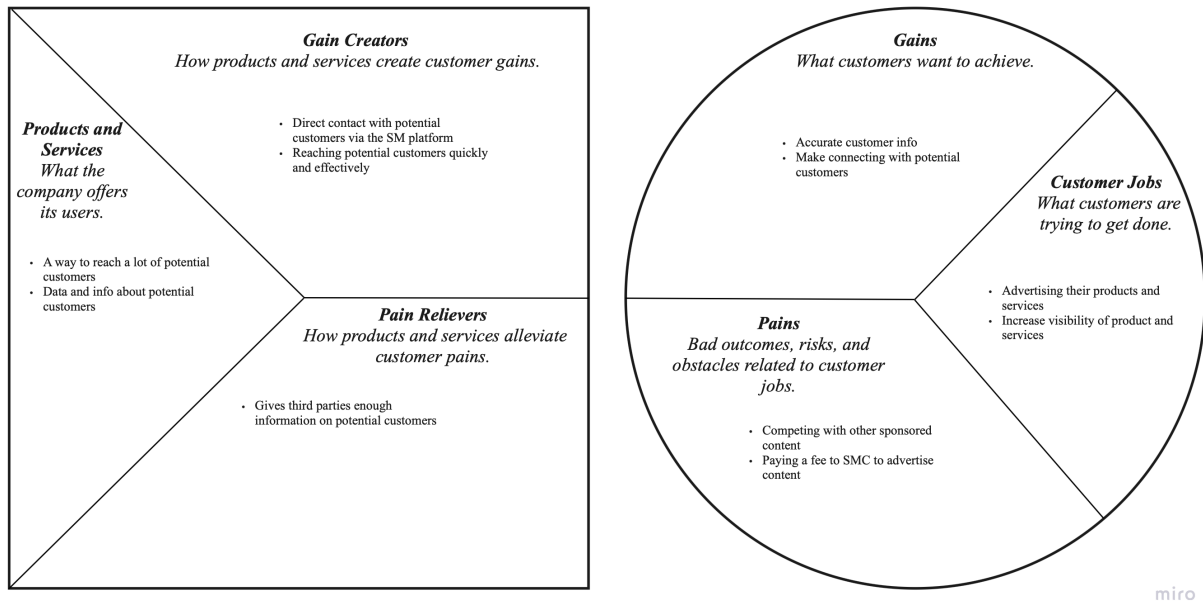


Fig.22: Common Elements of the Value Proposition Canvas of Instagram, Facebook and TikTok in relation to their advertisers and third parties
Author, 2022

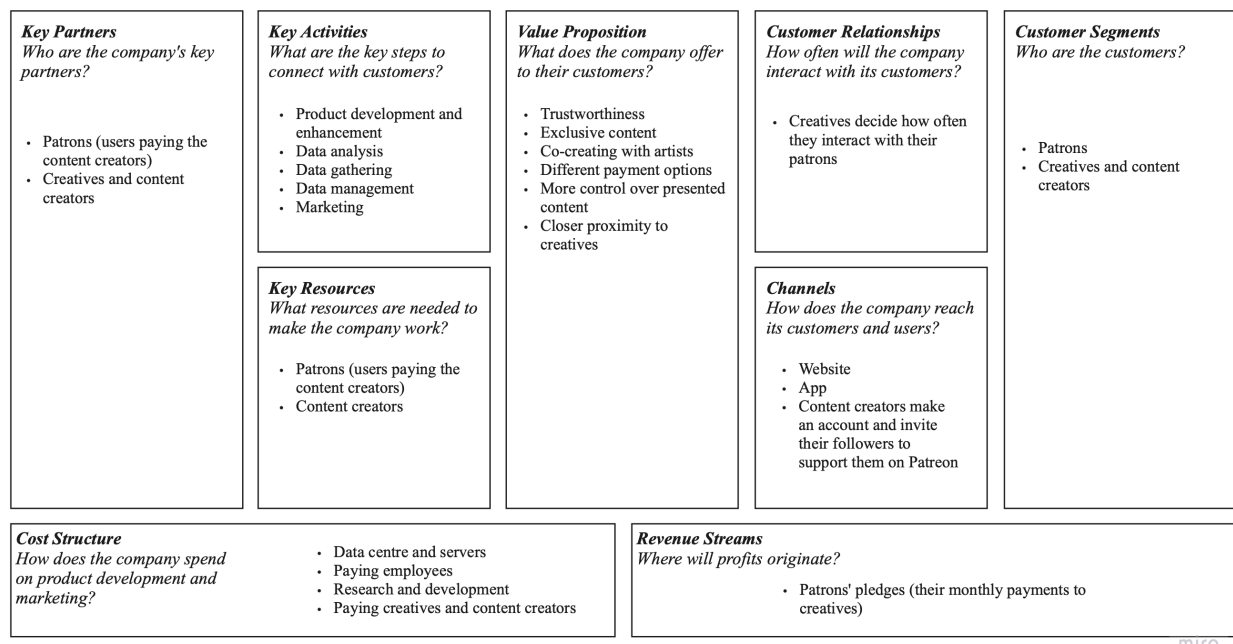


Fig.23: Patreon's Business Model Canvas, an Example of a Community Funded Platform
Author, 2022

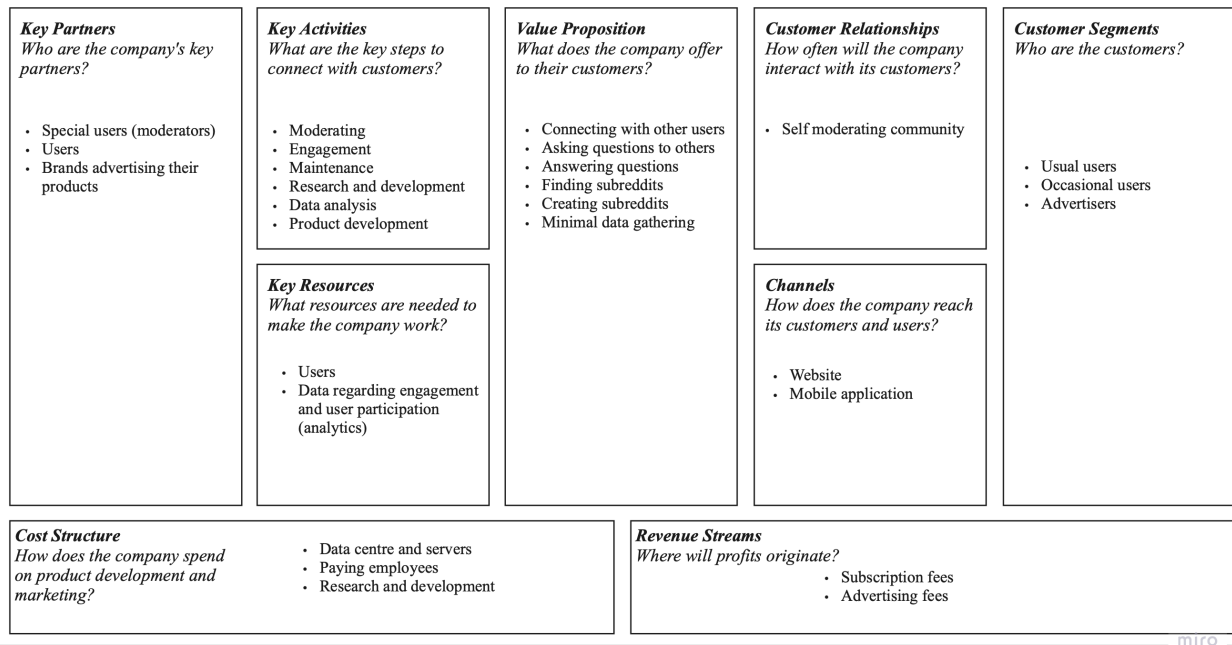


Fig.24: Reddit's Business Model Canvas, an Example of Community Moderation
Author, 2022

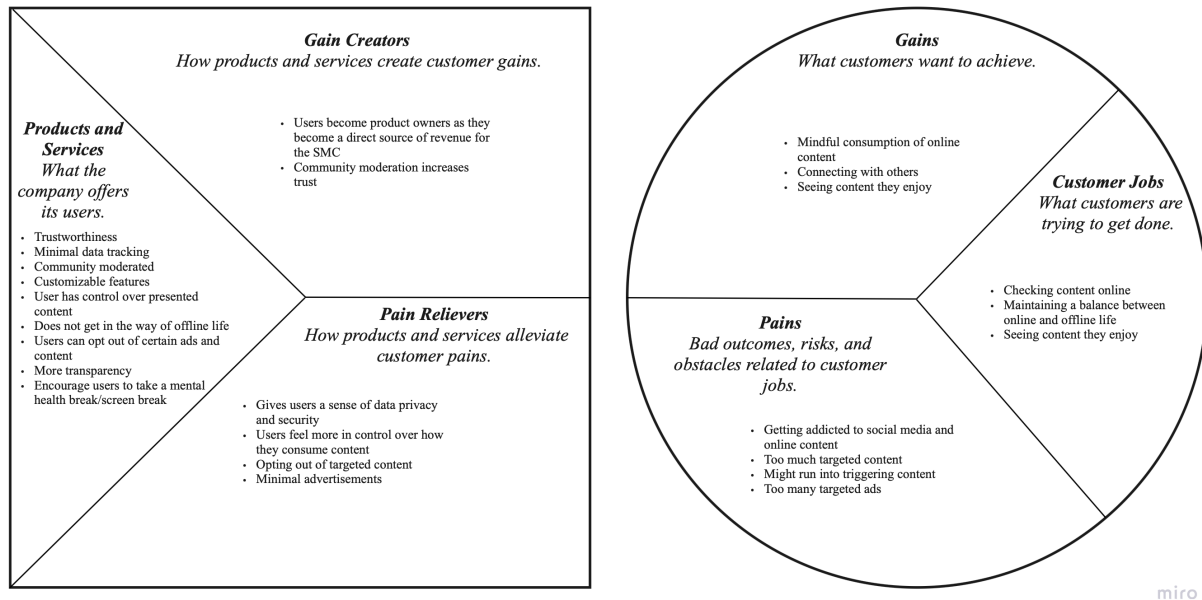


Fig.25: An SMC's Value Proposition for the User in the Ideal State "Live in the Moment" (Alternative VPC)
Author, 2022

Appendix C: Facebook's Increase in Revenue with Proposed Subscription Model

Percentage of users adopting subscription model	Number of users adopting model (in million)	Subscription cost per month in USD (ARPU* per month + 25%)	Income from subscription in million dollars	Income from non subscribers in million (ARPU per month is 3.18 USD)	Total income	Total increase in income from subscriptions per month in million dollars	Total increase in income from subscriptions per quarter in million dollars
0	0	3.975	0	6042	6042	0	0
1	19	3.975	75.525	5981.58	6057.105	15.105	45.315
2	38	3.975	151.05	5921.16	6072.21	30.21	90.63
5	95	3.975	377.625	5739.9	6117.525	75.525	226.575
15	285	3.975	1132.875	5135.7	6268.575	226.575	679.725
20	380	3.975	1510.5	4833.6	6344.1	302.1	906.3
30	570	3.975	2265.75	4229.4	6495.15	453.15	1359.45
40	760	3.975	3021	3625.2	6646.2	604.2	1812.6
50	950	3.975	3776.25	3021	6797.25	755.25	2265.75
100	1900	3.975	7552.5	0	7552.5	1510.5	4531.5

Fig.26: Table of Facebook's increase of income with proposed subscription model
Author, 2022

**ARPU: Average Revenue Per User*

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