

Finding Mitigation Strategies To Combat Doomscrolling On Instagram Reels



Capstone Thesis Document

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1. Introduction

1.1 Background

The pervasive influence of social media platforms has revolutionized the way we perceive and engage with reality. This capstone project delves into the profound implications of the ubiquitous, easily digestible content flooding our social media feeds, Instagram reels in particular. Social media platforms provide a constant stream of engaging snippets, resulting in dwindling attention spans and the emergence of "doomscrolling," where users compulsively navigate through content.

Through insightful analysis and actionable solutions, **the project aims to devise mitigation strategies within Instagram to address the reaction to our irrational side to scroll content on social media**, specifically for revenge procrastination and empower users to make conscious and informed decisions about their time spent online.

1.2 Capstone Overview

What am I trying to solve?

I am trying to solve the problem of "doomscrolling" on Instagram Reels, where users get caught in a vicious cycle of endlessly scrolling through content. This leads to reduced attention spans, loss of time, and negative impacts on wellbeing.

Platform Constraint

Instagram; Specific Focus on Instagram Reels.

How is it solving the problem?

I am proposing two design interventions aimed at breaking the loop of doomscrolling:

- **Slow Scroll**: Gradually slowing the scrolling speed after prolonged periods of scrolling to introduce friction that makes users pause and reflect.
- **Public Accountability**: Displaying time spent on Instagram on user profiles to invoke social accountability and motivate more conscious usage.

When does my solution come into the picture? (My intervention)

The solutions intervene when users have spent considerable time scrolling on Reels. The slow scroll kicks in after a certain set duration of scrolling activity, while the public accountability metric passively tracks usage over time and incentivizes when less time is spent scrolling.

Who is it for? (Target users)

My concepts target young adults ages 20-29 who are the top demographic of Instagram users. Within that group, the solutions would benefit frequent Reels users prone to falling into loops of excessive, mindless scrolling.

1.3 Objectives

The objective of this capstone project is to foster more mindful and intentional engagement with Instagram Reels among young adult users. By addressing the issue of doomscrolling, the aim is to promote healthier digital habits and enhance overall well-being, resulting in increased productivity and improved attention spans within this demographic.

1.4 Design Activities

The design activities encompass a multidisciplinary approach, integrating principles from user experience design, psychology, and behavioral economics. Initial stages involve thorough user research and data analysis to understand the patterns and triggers of doomscrolling behavior. Following this, iterative prototyping and user testing refine the proposed interventions, ensuring they effectively disrupt the doomscrolling loop without compromising user experience. Finally, implementation and evaluation phases assess the real-world impact of the interventions, measuring changes in user behavior and well-being metrics over time. Through these activities, the project aims to deliver tangible solutions that positively influence user habits and promote healthier digital engagement on Instagram Reels.

1.5 Outcomes

The anticipated outcomes of this project include a shift in user behavior towards more mindful consumption of content on Instagram Reels. By implementing the proposed design interventions, it is expected that users will experience reduced instances of doomscrolling, leading to improved attention spans, better time management, and enhanced overall well-being. Additionally, the project aims to contribute to a broader conversation around digital wellness and the responsible use of social media platforms among young adults.

2. Research Insights

The research I conducted was two-fold, combining extensive secondary research involving the thorough examination of academic papers and articles with primary research conducted through in-depth interviews.

2.1 Secondary Research Insights

I delved into over 9 papers before I started noticing common insights. The papers that were referred are cited in <u>References</u>.

Objectives

My objectives from secondary research were to learn the following:

- Understanding psychological motivations and impacts of doomscrolling on Instagram Reels.
- Examining how Reels' design promotes prolonged engagement.
- Identifying persuasive techniques used that contribute to doomscrolling.
- Exploring platforms' ethical obligations to prevent addictive usage.
- Uncovering solutions to help users self-regulate doomscrolling behavior.
- Determining ways platforms can ethically balance engagement and wellbeing.

Key Insights

The key insights I gained through research papers are as follows:

- Attention spans are increasingly challenged by captivating design of apps like Instagram that promote continual scrolling. This emphasizes the need for solutions that empower user self-regulation.
- Understanding behavioral addiction triggers tied to dopamine releases allows platforms to exploit those to boost engagement at the cost of user wellbeing. This highlights an ethical tension that needs addressing.
- Short-form video apps in particular create an endless content cycle that caters to shortened attention spans but could be countered through design interventions that promote mindfulness.

Learning Outcome

Understanding the psychological motivations behind doomscrolling on Instagram Reels, highlighting the need for design interventions to empower user self-regulation and promote mindfulness.

2.2 Primary Research Insights

I conducted two expert interviews, three user interviews with frequent users and one interview with a former user. This provided me with a deep understanding of the subject from both expert perspectives and the experiences of users.

The interview protocols I created while conducting interviews are added in the Appendix.

2.2.1 Expert Interviews

Objectives

My objectives from expert interviews were to learn the following:

- Understand psychological motivations and impacts of doomscrolling on Instagram Reels.
- Examine how Reels' design promotes prolonged engagement.
- Identify persuasive techniques used that contribute to doomscrolling.
- Explore platforms' ethical obligations to prevent addictive usage.
- Uncover solutions to help users self-regulate doomscrolling behavior.
- Determine ways platforms can ethically balance engagement and wellbeing.

Key Insights

The key insights I gained through expert interviews are as follows:

- Introducing friction while scrolling, fostering self-accountability, and providing incentives are effective strategies for breaking the doomscrolling loop on Instagram Reels.
- User wellbeing and commercial interests are often at odds on social platforms. Ethical technology design requires aligning business incentives with human values like moderation.
- Short-form video apps in particular create an endless content cycle that caters to shortened attention spans but could be countered through design interventions that promote mindfulness.

Learning Outcome

Understanding of the ethical complexities surrounding technology design and identified effective strategies for fostering user self-regulation and promoting well-being in the context of short-form video platforms like Instagram Reels.

2.2.2 User Interviews

Objectives

My objectives from user interviews were to learn the following:

- Understand factors driving frequent Reels use.
- Identify compelling features users value.
- Explore how users balance Reels and other activities.
- Learn time management strategies employed.
- Assess effectiveness of built-in self-regulation tools.
- Uncover opportunities to combat excessive usage.
- Promote conscious Instagram usage through self-control.

Key Insights

The key insights I gained through user interviews are as follows:

- While features like redirection increase time on Reels, users equally value balancing that with other aspects of their lives. This presents an opportunity to enhance built-in controls for moderation.
- Allowing uncontrolled, passive scrolling on apps enables dissociation from the present moment. Fostering intentionality and self-awareness is key to counteracting this.

Learning Outcome

Understanding the importance of balancing digital engagement with other aspects of life and the necessity for promoting self-regulation and mindfulness in social media usage.

3. Synthesizing Insights

To understand the user pain points, I created a User Journey Map of the users while scrolling through Instagram Reels and identifying the opportunity space for my intervention.



Fig 1. User Journey

3.1 Analysis of User Journey Map

The user journey highlights a **repetitive loop** that users can easily fall into while scrolling Instagram Reels. There is a cyclical flow between passively browsing the feed, getting distracted by content, losing track of time, and then proceeding to scroll more.

Pain Points

The key pain point that emerges in this loop is the **frustration** and **disappointment** users feel when they look up and realize they have spent far more time mindlessly scrolling than they intended.

Opportunity

The user journey shows how easy it is to get trapped in repetitive passive browsing. But it also makes clear there is an opportunity to shift that pattern to one of greater self-awareness over one's attention and time. My intervention would be to **break this loop**.

4. My Intervention: Break The Loop

Users easily get caught in an infinite loop of doomscrolling and are unable to escape it. Hence, my design intervention is to **break the loop**.



Fig 2. My Intervention: Break The Loop

By breaking the loop, I mean having the users pause their Instagram Reel scrolling for a moment to reflect on their activity in addition to encouraging them to do something more meaningful.

5. Problem Statement

After carefully analyzing secondary research, expert opinions, and user insights through user journey, I refined the core issue into a simple problem statement:

"How might we enable users to regulate their doomscrolling behaviors on Instagram Reels?"

6. Ideation

6.1 Incorporating Research Insights

I developed several concepts focused on effectively breaking the cycle of endless scrolling by incorporating strategies to #BreakTheLoop.



- 1. **Friction**: Introducing friction while scrolling serves as a pivotal strategy to disrupt the doomscrolling loop on platforms like Instagram Reels.
- 2. Accountability: Implementing accountability measures, such as public tracking of time spent, fosters self-awareness and encourages conscious usage, mitigating the tendency for excessive scrolling.
- 3. **Incentivization**: Offering incentives for mindful engagement, such as rewards or achievements, provides users with positive reinforcement to break the cycle of endless scrolling on social media platforms.

6.1 Concept Generation

Based on the concepts, Friction, Accountability and Incentivization, I had a bunch of ideas that could be implemented to break the loop.

To learn more about these generated concepts, please refer the Appendix.



Concept 1: Diversion Interrupting the endless scrolling of Instagram Reels with a gentle nudge to make platform usage more intentional. #Friction



Concept 2: Slow Scrolling Deliberately slowing down the scrolling speed after prolonged usage to prompt users to take a break and reflect. #Friction



Concept 3: Positive/Negative Reinforcement Providing tailored prompts based on users' responsiveness to encourage conscious and moderated app usage. #Friction



Concept 4: Triggers Displaying unrelated content to disrupt passive scrolling and encourage reassessment of motivations. #Friction





Concept 5: Irrelevant Content Displaying unrelated content to disrupt passive scrolling and encourage reassessment of motivations. #Friction Concept 6: Placeful Phone Incorporating in-app vibrations, background music, and smartwatch vibrations to break scrolling loops and enhance self-awareness. #Friction



Concept 7: Public Accountability Adjusting content and notifications based on context to promote balance between engagement and other aspects of life. #Accountability



Concept 8: Fear Of Other Missing Out (FOOMO) Displaying public scoreboard of the app and reel usage to leverage social accountability for moderation. #Accountability



Concept 9: Talking to your Future-Self Prompting users to consider the future costs of excessive usage through messages from their future selves. #Accountability

To identify viable concepts, I evaluated them against business goals, conducted an initial round of testing for validation, and analyzed behavior change models, and ultimately arrived at the selection of the final solutions.

7. Considering Business Goals

One major aspect I particularly focused on were the business goals. I wanted my designs to be able to provide solutions without negatively impacting Instagram's business model. This helped me further funnel down my concepts. My considerations included:

Brand Image

When recommending marketing solutions, assessing the potential impact on our brand image and reputation along with accounting for practical feasibility.

Ad Effectiveness

Encouraging meaningful interactions and reducing mindless scrolling can improve ad visibility and effectiveness, appealing to advertisers and boosting ad revenue.

After careful consideration of business factors, I refined my concepts further, eliminating **#Diversion**, and **#IrrelevantContent**, as they did not align with Instagram's Business Goals.

8. Validating Concepts

I conducted paper prototyping to identify usability issues.



Fig 3 & 4. Conducting Paper Prototyping

Key Insights

Here are my insights based on the paper prototyping which helped me strengthen my prototypes:

- Redundancies identified in user flows for managing multiple profiles the ability to switch between profiles could be streamlined.
- Testing revealed certain use cases around sharing profile information that were not yet accounted for in the prototypes needed to expand concepts to address collaboration workflows.
- Language around instructions and labels created confusion in several areas of the prototypes changes needed to terminology and messaging to simplify navigation along with the introduction of a tooltip to allow the first-time users to understand the functionality better.
- Low fidelity prototypes did not have enough differentiation between certain states and interactions additional work needed to create hierarchy and clarity across screens.

Additionally, I recognized that certain concerns were not addressable, while some ideas proved impractical and needed to be discarded during the refinement process.

Insights from this activity led to excluding **#PlacefulPhone**, as it resembled the DND feature, and **#Future-Self**, which required additional steps.

8. Secondary Research (Round #2)

To achieve the mitigation of mindless scrolling on Instagram Reels and promoting more mindful usage among users, I aimed to incorporate a Behavior Change Model into my project framework based on the research I conducted. After going through research papers, the Transtheoretical model closely aligned with my solutions.

This model offers comprehensive insights and a structured approach to understand, analyze, and effectively influence user behavior towards more positive and intentional engagement with the platform. By leveraging this model, I aim to provide well-founded solutions that not only tackle the problem at hand but also contribute to fostering healthier digital habits among social media users.

8.1 Transtheoretical Model for Behavior Change

Research Paper: Transtheoretical Model For Designing Technologies Supporting An Active Lifestyle by Michela Ferron, Paolo Massa

Research Goals

- The paper aims to support positive behavior change towards increased physical activity, similar to my goal of combatting problematic social media overuse like Instagram doomscrolling.
- We share the value of adaptive interventions suited to the user's change stage rather than a one-size-fits-all approach.

Aligning Similar Methodology

- The research combines analysis of behavior change models with qualitative and quantitative data on user motivation and habits, much like my use of research and expert and user interviews.
- This allows tailoring solutions to the psychological obstacles users face in changing technology behaviors.

Reinforcing Design Approach

- The paper's mapping of interventions to Transtheoretical stages reinforces my approach of creating solutions targeting users' specific barriers.
- My Slow Scroll concept introduces contemplation stage friction while Public Accountability leverages maintenance stage intrinsic motivation,
- Adaptive stage-based solutions align well with the paper's recommendations.

The shared goals, complementary mixed methods research, and adaptive design concepts make the Transtheoretical Model paper closely aligned with and validating of my own project's approach to enabling positive technology behavior change.

8.1.1 Transtheoretical Model (Stages of Change)

This model conceptualizes behavior change occurring through 5 stages **precontemplation**, **contemplation**, **preparation**, **action**, and **maintenance**. In relation to doomscrolling, this model suggests interventions tailored to each stage, from raising awareness to supporting new scrolling habits.



Fig 5. Specific intervention strategies for each stage of the Transtheoretical Model

How does it fit into my Solutions?

The Transtheoretical Model would fit well because:

- Slow Scroll acts as a nudge at the Contemplation stage: When scrolling speed slows, it prompts users to consciously reflect on this habit, acknowledging potentially problematic patterns. This aligns with contemplating change.
- **Public Accountability supports the Preparation stage**: Displaying usage metrics helps users evaluate their readiness to cut back scrolling time and make specific plans for reducing this habit. Public stats hold users accountable as they prepare.
- Both solutions scaffold the incremental Action stage: Slow Scroll and visible usage data don't eliminate scrolling entirely, but gradually support users in modifying and practicing more conscious scrolling behaviors. Slow progress is encouraged through features enabling self-awareness.

The Transtheoretical Model mirrors the incremental behavior shifts empowered by Slow Scroll and Public Accountability through interlinked stages advancing users already motivated to scroll less compulsively. The solutions leverage awareness and accountability to reinforce new behaviors - aligning perfectly with core premises of this stage-based change model.

#SlowScroll and **#PublicAccountability** leverage awareness and accountability to reinforce new behaviors, aligning with the model's core premises.

9. Finalizing On An Approach

Initially, I was contemplating selecting one of the two concepts. In order to gain clarity and better navigate this dilemma, I undertook a comprehensive analysis of the pros and cons associated with each option. This methodical approach allowed me to delve deeper into the intricacies of each concept, enabling a more informed decision-making process.

9.1 Solution Approach 1: Including Only Slow Scroll



Fig 6. Slow Scroll

Pros	Cons
Focuses on a single	Addresses only one aspect of
intervention, allowing for a	doomscrolling behavior, which
more streamlined	may not be sufficient for
implementation process.	comprehensive behavior change.
Easier for users to understand	Lacks the reinforcement and
and adopt a single feature.	accountability provided by the
	Public Accountability solution.
	May not cater to users' varying
	needs and motivations.

9.2 Solution Approach 2: Including Only Public Accountability



9.3 Solution Approach 3: Integrating Both Slow Scroll and Public Accountability Solutions



Fig 8. Integration of Slow Scroll & Public Accountability

Pros	Cons
Addresses doomscrolling from multiple	More complex to implement and maintain
angles, increasing the chances of	two separate features.
successful behavior change.	
Caters to different user needs and	Users may find it overwhelming to adopt
motivations by providing direct intervention	and engage with multiple features
(Slow Scroll) and accountability (Public	simultaneously.
Accountability).	
Reinforces the behavior change through a	
combination of friction and social	
accountability.	
Provides a comprehensive and holistic	
approach to combating doomscrolling.	
Allows for potential synergies between the	
two solutions, enhancing their combined	
effectiveness.	

Following constructive brainstorming discussions, I believe that **incorporating both these** approaches would be most beneficial.

By integrating both the Slow Scroll and Public Accountability solutions, I can address doomscrolling behavior from multiple angles, increasing the chances of successful behavior change. The combination of direct intervention (Slow Scroll) and social accountability (Public Accountability) caters to different user needs and motivations, providing a comprehensive and holistic approach. While implementing and maintaining two separate features may be more complex, the potential synergies and the ability to address various aspects of doomscrolling make this approach more promising.

10. Exploring Public Accountability

Upon further exploration of the synergy between the Slow Scroll and Public Accountability concepts, new possibilities for intervention have emerged. While the Slow Scroll concept has been thoroughly explored, the **Public Accountability** concept has been further developed.

10.1 Sub-Concept 1: The Leaderboard

One additional feature of the Public Accountability concept is the introduction of a Leaderboard. The Leaderboard is an optional feature, as some users may not view reducing their Reels consumption as a competition. These users can opt to directly share their daily usage with friends or well-wishers. However, competition can be a significant motivator for behavior change, and therefore, the Leaderboard option will be included.



Fig 9. Leaderboard

10.2 Sub-Concept 2: The Circle

Users can create a "Circle," where they will compete to reach the top of the Leaderboard. The Leaderboard ranking will be determined by the least amount of time spent on Instagram and watching Reels.



10.3 Sub-Concept 3: Badges

Users can earn "Badges" for curbing their scrolling habit. These Badges will be displayed on their profiles. This addresses privacy concerns, as only members of their Circle will be able to see the amount of time they spend on Instagram and Reels (which they have opted to share). However, the Badges will be visible to all their followers, showcasing their progress in developing healthy habits and potentially motivating others to follow suit. Badges promote positive behavior change without compromising privacy.



Fig 11. Badges

11. Secondary Research (Round #3)

Objectives

- Explore users' privacy concerns regarding information disclosure.
- Investigate strategies to cultivate trust in solutions amidst privacy apprehensions.
- Examine the impact of transparency and control on users' willingness to share personal data.
- Assess the role of trust, social ties, and perceived audience in user disclosure behavior.
- Investigate the effectiveness of framing and audience segregation in encouraging data sharing while respecting privacy concerns.

Key Insights

- Users are more willing to disclose personal information to close ties.
- Transparency and control over shared information increase willingness to disclose.
- Trustworthy relationships and perceived audience influence disclosure decisions.
- Positive framing and fine-grained sharing controls enhance sharing intentions.
- Public displays of success prompt similar behavior, but users may selectively share.

Learning Outcome

Addressing privacy concerns involves providing transparency, user control, highlighting benefits, audience segregation, building trust, and aligning with self-presentation goals.

12. Competitive Analysis Of Gamified Apps

App/Feature	How it Works	Advantages	Disadvantages
Fitbit Community Leaderboards	 Users can join challenges or create their own Leaderboards rank participants based on steps, distance, or active minutes 	 Encourages friendly competition Customizable challenges cater to different goals Social accountability within challenge groups 	- Limited to fitness metrics
Forest App Leaderboard	 Users earn virtual trees/coins for staying off their phones Leaderboard ranks users based on trees/coins earned 	 Directly incentivizes reduced phone usage Gamified with virtual rewards Leaderboard provides motivation 	- No social aspect or ability to compete with friends
Apple Screen Time Challenge	 Users can set personal goals for reduced app usage App tracks progress and shares completion badges 	 Directly targets limiting app usage Badges provide a sense of achievement Integrated into iOS for seamless tracking 	 No social/competitive element Badges not visible to others Limited to Apple devices
Strava Segment Leaderboards	- Users can compete on specific route segments	- Highly focused competitions - Caters to different skill levels	- Limited to fitness/sports activities

	- Leaderboards rank users based on segment times	- Social sharing and kudos system	- No direct link to reducing screen time
YouTube Watch Time Leaderboard	- Channels can enable a leaderboard - Ranks viewers based on total watch time	 Incentivizes engagement with content Fosters a sense of community Leaderboard visibility drives competition 	- Encourages more screen time, opposed to reducing it

Key Takeaways

By analyzing existing leaderboard implementations, I now can visualize a range of approaches tailored to different goals, such as fitness, productivity, or engagement. While some features like Forest App and Apple Screen Time directly target reducing screen time, they lack a social or competitive element. Conversely, platforms like Fitbit, Strava, and YouTube leverage leaderboards for social accountability and competition.

My proposed solution of combining leaderboards with customizable "circles" and achievement badges can potentially bridge this gap, fostering social accountability and friendly competition while directly incentivizing reduced Instagram and Reels usage.

13. Validating New Leaderboard features

Using paper prototyping, sketches of leaderboards, badges, and usage trackers surfaced competitive elements to gauge user interaction and feedback.



Fig 12. The Leaderboard

Key Insights

- Users responded positively to the competitive aspect introduced by leaderboards, showing increased engagement and motivation.
- Clear visual cues and gamification elements like badges enhanced user interaction and incentivized participation.
- Users appreciated the option to track usage metrics but expressed concerns about privacy and control over shared data.
- Audience segregation features were deemed essential for users to manage their visibility and maintain privacy preferences.
- Trust-building elements, such as highlighting benefits and emphasizing transparency, were crucial for mitigating privacy concerns and fostering user confidence in the system.



Fig 13 & 14. Conducting Paper Prototyping with Gamification Features

14. The Solution: Introducing "Unreel"

Unreel offers a solution for mindful social media usage to take control with:

- Slow Scroll, gently reducing scrolling speed.
- Public Accountability, featuring user time tracking.
- Leaderboards and Badges for healthy competition, promoting positive habits without compromising privacy.

14.1 Public Accountability Through Daily Usage

Users' daily time spent on Instagram and Reels is displayed to the selected friends, fostering social accountability that can motivate reduced scrolling.



Track your daily usage on your profile

View details of your daily usage

Share your daily usage with friends

Friends view your daily usage

Features:

- Tracks and displays the daily Instagram and Reel usage on the user's profile.
- Makes the usage metrics visible to friends who they wish to share it with.
- Creates social accountability which fosters healthy habits among users.

#ValueProposition

This empowers users to be more mindful and accountable of their habits.

14.2 Introduction "The Circle"

Users opt to compete on leaderboards within their chosen "Circle" to achieve the lowest Reels usage time and earn public achievement badges.



Build your circle through Instagram groups

Select friends to join your circle

View your weekly or monthly leaderboard

Earn badges to showcase on your profile

Features:

- Introduces leaderboards to rank lowest Reels usage time within their "Circle."
- Users can earn and display achievement badges without compromising on privacy.
- Motivates users through competition and recognition of positive habit formation.

#ValueProposition

This provides motivation to users through friendly competition and recognition.

14.3 Slow Scroll



After extended scrolling periods, Instagram Reels would intentionally slow down the scrolling speed to introduce friction and prompt reflection on usage.

Features:

- Introduces friction by gradually decreasing the scrolling speed.
- Aims to prompt users to pause and reflect on their reel consumption.
- Gently nudges to take a break without abruptly forcing them to quit the app.

#ValueProposition

This gentle nudge encourages users to take healthy breaks from mindless content consumption.

15. Usability Testing

After conducting usability testing on the above-mentioned concepts, I'm happy to report that the majority of the feedback was overwhelmingly positive.



Fig 15 & 16. Usability Testing for the Final Solutions

Key Insights

- Users appreciate the transparency of daily usage metrics. Knowing their own and their friends' usage fosters a sense of accountability.
- Some users may feel uncomfortable sharing their usage metrics with friends, even if it's optional. Providing clearer privacy controls or options for anonymous participation could address this concern.
- The introduction of leaderboards within Circles encourages friendly competition, motivating users to reduce Reels usage.
- The Slow Scroll feature is generally well-received, as it gently reminds users to take breaks and reflect on their usage habits without interrupting the browsing experience significantly.
- While the leaderboards and achievement badges are motivating for some, others may find them stressful or triggering for comparison anxiety. This was followed by me explaining that this is an opt-in feature.

16. Future Scope

Behavioral Insights Integration

Incorporate insights from behavioral psychology to further refine features. This could involve A/B testing variations of the Slow Scroll feature to determine the most effective friction point for prompting reflection.

Expanded Gamification

Explore additional gamification elements beyond leaderboards and achievement badges. This could include challenges, rewards, or collaborative activities within Circles to promote positive behavior change.

Personalized Recommendations

Develop algorithms to provide personalized recommendations for users based on their usage patterns and goals. This could include suggesting relevant content or activities that align with their interests and promote healthy habits.

Community Building

Foster a sense of community within Circles by facilitating interactions beyond competition. This could involve discussion forums, group challenges, or supportive messaging features to encourage mutual encouragement and accountability.

Integration with Well-being Apps

Partner with existing well-being apps or platforms to provide holistic support for users' mental and emotional health. This could involve seamless integration of usage data and insights to complement existing well-being strategies and resources.

17. Reflection

Reflecting on my year long journey has been a great experience. Throughout this project, I encountered amny challenges, but each one served as a steppingstone to my growth and success.

One of the initial challenges I faced was conceptualizing the project itself. Deciding on the features and value propositions required extensive research and brainstorming. However, overcoming this challenge allowed me to solidify my vision and set the project's direction.

The usability testing phase presented its own set of challenges. Balancing feedback from users while staying true to the project's objectives required careful consideration and adaptability. However, the insights gained from testing enabled me to refine the project.

Maintaining motivation and focus throughout the two semesters was perhaps one of the greatest challenges I encountered. Juggling coursework, deadlines, and personal commitments tested my time management and resilience.

Amidst the challenges, there were also significant accomplishments like, conceptualizing and designing features that promote social accountability and healthy habits was a fulfilling creative process. Seeing the project come to life validated the effort and dedication I invested.

The supportive guidance of the teaching team played a crucial role in my journey. Their encouragement, feedback, and mentorship provided me with invaluable support, guiding me through the project's complexities and helping me navigate challenges with confidence.

This solo project was also a refreshing break from the collaborative nature of other group projects. While group projects have their merits, the opportunity to independently explore my ideas, make decisions, and see them come to life was immensely gratifying.

18. Acknowledgment

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19. References

- 1. Aylsworth, T., & Castro, C. (2021). Is there a duty to be a digital minimalist? *Journal of Applied Philosophy*, *38*(4), 662–673. **<u>https://doi.org/10.1111/japp.12498**</u>
- Baughan, A., Zhang, M. R., Rao, R., Lukoff, K., Schaadhardt, A., Butler, L. D., & Hiniker, A. (2022). "I don't even remember what I read": How design influences dissociation on social media. CHI Conference on Human Factors in Computing Systems. **<u>https://doi.org/10.1145/3491102.3501899**</u>
- Bulut, D. (2023). The association between attention impairments and the internet and social media usage among adolescents and young adults with potential consequences: A review of literature. *Psychology*, *14*(08), 1310–1321.
 https://doi.org/10.4236/psych.2023.148073
- Karunakaran, R., R, G., Ram, M. K., & S, A. (2022). Antecedents of binge-scrolling short-form videos. 2022 International Conference on Innovations in Science and Technology for Sustainable Development (ICISTSD).
 https://doi.org/10.1109/icistsd55159.2022.10010460
- Lukoff, K., Lyngs, U., Shirokova, K., Rao, R., Tian, L., Zade, H., Munson, S. A., & Hiniker, A. (2023). Switchtube: A proof-of-concept system introducing "adaptable commitment interfaces" as a tool for digital wellbeing. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. **<u>https://doi.org/10.1145/3544548.3580703**</u>
- MACİT, H. B., MACİT, G., & GÜNGÖR, O. (2018). A research on social media addiction and dopamine driven feedback. *Mehmet Akif Ersoy Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 5(3), 882–897.
 <u>https://doi.org/10.30798/makuiibf.435845</u>
- Monge Roffarello, A., Lukoff, K., & De Russis, L. (2023). Defining and identifying attention capture deceptive designs in digital interfaces. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*.
 <u>https://doi.org/10.1145/3544548.3580729</u>
- Mujica, A., Crowell, C., Villano, M., & Uddin, K. (2022). Addiction by design: Some dimensions and challenges of excessive social media use. *Medical Research Archives*, 10(2). **<u>https://doi.org/10.18103/mra.v10i2.2677**</u>
- Stepanovic, M., Boer, L., & Jenkins, T. (2022). Reconfiguring the smartphone to support intentional use. Nordic Human-Computer Interaction Conference.
 <u>https://doi.org/10.1145/3546155.3546675</u>
- Ferron, M., & Massa, P. (2013). Transtheoretical model for designing technologies supporting an active lifestyle. Proceedings of the Biannual Conference of the Italian Chapter of SIGCHI. <u>https://doi.org/10.1145/2499149.2499158</u>
- 11. Li, H., Sarathy, R., & Xu, H. (2019). Privacy Concerns and Information Revelation: A Meta-Analysis. MIS Quarterly, 43(3), 779–796. https://doi.org/10.25300/MISQ/2019/13481

- 12. DiMicco, J. M., & Millen, D. R. (2010). Identity management: Multiple presentations of self in Facebook. Proceedings of the ACM International Conference on Supporting Group Work, 383–386. <u>https://doi.org/10.1145/1718918.1718981</u>
- 13. Hallam, C., & Zanella, G. (2018). Self-Disclosure and Privacy Calculus on Social Networking Sites: The Role of Framing. Proceedings of the ACM on Human-Computer Interaction, 2(CSCW), 1–23. <u>https://doi.org/10.1145/3274376</u>
- Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social wellbeing. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 1909–1912. <u>https://doi.org/10.1145/1753326.1753613</u>

20. Appendix

20.1 Concepts Generation

Concept 1: Diversion

In this concept, I introduce a little detour for users who tend to scroll endlessly through Instagram Reels. While I don't ask them to leave the app, I cleverly interrupt their constant scrolling. It's a gentle nudge to make their time on the platform more intentional and less of a mindless loop.



Fig 17. Diversion

Supporting Research: Matches the insight about short-form video apps creating an endless content cycle. The diversion interrupts that cycle.

Concept 2: Slow Scrolling

After spending a considerable amount of time scrolling, I slow down the scrolling speed on purpose. It becomes a bit annoying, making users pause and wait for things to go back to normal. This deliberate slowdown is like a signal for users to take a break, think about what they're doing, and then continue.



Supporting Research: Aligns with the need to counter shortened attention spans through design interventions promoting mindfulness. The slow down prompts increased awareness.

Concept 3: Positive/Negative Reinforcement

This concept involves the app giving you feedback based on how you use it. If you respond well to positive prompts, the app gives you more of those. If negative prompts work better for you, I adjust accordingly. The goal is to encourage users to use the app more consciously and in a way that works best for them.



Fig 19 & 20. Positive/Negative Reinforcement

Supporting Research: Relates to the opportunity highlighted to enhance built-in self-regulation controls. The tailored prompts aid moderation.

Concept 4: Triggers

In-app trigger

- After they have been scrolling for a considerable amount of time, the phone vibrates to break their loop.
- Similarly, after they have been scrolling for a considerable amount of time, the phone starts playing music in the background to break their loop.



Fig 21. In-App Triggers

Supporting Research: Connects to the insight on enabling dissociation from the present moment. The triggers encourage intentionality and self-awareness.

Ambient trigger

If you have a smartwatch, it could vibrate to remind you to stop scrolling. These triggers • add an extra layer of awareness to your scrolling habits.



Fig 22. Ambient Triggers

Supporting Research: Also ties to the dissociation insight. Multi-sensory triggers enhance awareness of usage behaviors.

Concept 5: Irrelevant Content

Sometimes, I'll show you content that has nothing to do with what you usually like. It's a little trick to break your scrolling loop and give you a moment to think about whether you really want to keep scrolling.



Fig 23. Irrelevant Content

Supporting Research: Disrupts the passive, uncontrolled scrolling tied to behavioral addiction triggers like dopamine releases. Forces reassessment of motivations.

Concept 6: Placeful Phone

Depending on the context, the app will not only show you content that fits the moment but also adjust notifications. For example, when you reach college, it might turn off non-essential notifications, helping you focus on your surroundings and reducing unnecessary

distractions. Another example could be, showing you calming content at bedtime.



Fig 24 & 25. Placeful Phone

Supporting Research: Promotes balancing engagement with other aspects of life, fitting usage to contexts. An ethical balance benefiting wellbeing.

Concept 7: Public Accountability

Your profile will have a new section showing how much time you spend on Instagram and what you spend it on. It's like a public scoreboard. It might make you think twice about spending too much time on certain parts of the app.



Fig 26: Public Accountability

Supporting Research: Leverages social accountability to align business incentives (engagement) with human values like moderation.

Concept 8: FOOMO (Fear of others missing out)

You can only send a limited number of Reels to your friends. This means you'll only come back to the app when you have something really interesting to share. It helps you detach a bit from the app and use it more intentionally.



Fig 27. FOOMO (Fear of others missing out)

Supporting Research: Limits passive content consumption, encouraging more intentional sharing. Supports detachment from app and controlled usage.

Concept 9: Talking to your Future-Self

This concept is about making you think about the future. Before you spend a lot of time on Reels, the app might show you a message from your future self, asking if spending so much time here is really worth it. It's like a friendly reminder to use your time wisely.



Fig 28. Talking to your Future-Self

Supporting Research: Encourages users to consciously evaluate costs of excessive usage, relating to ethical tensions between commercial interests and user wellbeing.

20.2 Interview Protocols

- 1. Expert Interview Protocol 1
 - a. **Areas of Expertise:** Consumer behavior and decision making, branding, retail, investor psychology, generational differences, and marketing in China
 - b. <u>https://drive.google.com/file/d/1oc08VUEYKsBpcrgsXRw8lIBlF2fmjOgY/view</u> <u>?usp=drive_link</u>
- 2. Expert Interview Protocol 2
 - a. **Areas of Expertise:** Video Game Marketing, Influencer Marketing, Social Networks, Social Influence, Social Media
 - b. <u>https://drive.google.com/file/d/1rKvfloLKZKpw2crRwhTwZrotA578aXFQ/view</u> <u>?usp=drive_link</u>
- 3. User Interview Protocol 1: Frequent Users <u>https://drive.google.com/file/d/10lphrOFYDwVesD5aWolnKd1ssozTg5kl/view?usp=</u> <u>drive_link</u>
- 4. User Interview Protocol 2: Former Users <u>https://drive.google.com/file/d/11xxAnsyI0pgojY5HceyTr5r96NuZDoej/view?usp=dri</u> <u>ve_link</u>