

Exploring User Addiction to Social Media Apps: The Role of Design Elements and User Behaviour

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Abstract: In the age of smartphones and social media, user engagement has reached unprecedented levels. However, this surge has also given rise to phone addiction, particularly as social media platforms increasingly adopt design elements that keep users hooked. This article explores the key design elements that drive user engagement and contribute to addiction. Focusing on patterns like infinite scroll, social validation, and personalised content, the article draws insights from popular social media apps like Instagram, TikTok, and Facebook. Additionally, it discusses the psychological underpinnings of these designs and examines the ethical concerns associated with their implementation.

Keywords: Digital addiction, social media design, user engagement, variable rewards, infinite scroll, FOMO, personalised content, social validation

INTRODUCTION

In today's hyper-connected world, smartphones have become indispensable. A major driver of this reliance is social media, where millions of users spend hours daily engaging with platforms like Instagram, TikTok, and Facebook. While the design of these platforms is crafted to enhance user experience, the unintended consequence is often compulsive usage commonly referred to as phone addiction. As social media designers optimize for engagement, many users find themselves trapped in endless cycles of scrolling, liking, and checking for updates. This article examines the core design elements responsible for such addiction, shedding light on the patterns that keep users returning to their screens. The use and the definition of mobile phone is undergoing reinterpretation as the mobile phone blurs the distinction between personal communicator and mass media. The mobile phone has become one of the most omnipresent communication devices within the past decade. According to Cohen and Lemish (2002), mobile phones used to be an esoteric device. Today, the mobile phone is certainly the most pervasive communicative device that people carry. The mobile phone can connect people "anytime", "anywhere" and with "anybody", with the added benefit of mobility and portability. Mobile phone technology is becoming more advanced every year, especially in the Korean market. For example, new mobile telephone models are offered every 3 months from numerous manufacturers. Also, mobile phone users now can watch movies, play video games, listen to music, pay for goods and services and so forth. Hence the mobile telephone is "more than meets the eye. Despite the rapid acceptance of mobile phone use around the world, the social and cultural impacts of mobile phone have attracted little academic attention so far, but there are a small number of research projects that deal with the social implications of mobile phone use from various countries. In Korea, there are five published studies that dealt with the social uses of mobile phones (Bae, 2001, 2002; Kim, 2001; Na, 2001; Sung and Choi, 2002). However, previous studies were basically exploratory in nature and viewed the use of the mobile phone from functional perspectives. With the proliferation of mobile phone use, not a single study has dealt with the possible negative consequences of mobile phone use despite the fact that there is some evidence that mobile phone use can have negative effects. Some of the popularized negative consequences of mobile phone use include dangers of driving while on the mobile phone and harmful effects of radiation emitted from the mobile phone itself. However, these reported ill-effects of mobile phone use result from either the medium's machinery itself (e.g. radiation, heat) or ill-coordination of physical movement. None of the previous studies has dealt with the possible negative psychological effects on the mobile phone user, especially dependence on the mobile phone due to heavy use of the medium. The term "addiction" can be imprecise, it does grasp the notion of real-life problems. Addiction can cause detrimental damage both to individuals and to society because addicted people cannot work or study owing to their physical and psychological dependence on substance/media, disabling their functionality within society.

Hence, in the light of reported cases of college students and other similar cases, we can safely conclude that there is a possibility of addiction to mobile phone use. The study of addiction to the mobile phone is important for two reasons. First, it is important to define the nature of mobile phone behaviour among people because what constitutes a problem use or not must be defined. Furthermore, the study of addiction can better understand the possible social and psychological effects and processes of media use because the notion of addiction includes high/over-use of the medium. For instance, cultivation studies argue that extensive watching of television correlates with the distorted perception of real life.

MOBILE PHONE COMPONENTS

Mobile phones are made up of a variety of components, including:

Body: The body of a mobile phone is often made from an aluminium alloy, which may also contain magnesium or other metals to increase its strength.

Software: The software on a mobile phone allows it to perform its various functions, such as making calls, sending texts, and using apps.

Radio interface: The radio interfaces on a mobile phone allow it to connect to the network and transmit and receive signals.

The history of mobile phones includes several key developments:

1908: The technology to create a mobile phone was patented in Kentucky.

1946: AT&T Bell Labs created the first mobile telephone system in St. Louis, Missouri.

1973: Martin Cooper of Motorola demonstrated the first handheld cellular mobile phone, the DynaTAC 8000x.

1994: IBM introduced the Simon Personal Communicator, a touchscreen phone that could send emails, faxes, and make calls.

2007: Apple launched the iPhone, which revolutionized mobile communication with its minimalist design and app-based functionality.

2019: Deployment of fifth-generation (5G) cellular networks commenced worldwide.

Understanding Addiction in Design

At the heart of phone addiction is a psychological mechanism that taps into reward systems in the brain. Social media apps are designed to trigger the release of dopamine, the "feel-good" neurotransmitter responsible for pleasure and motivation. Every like, notification, or comment provides a small hit of dopamine, reinforcing the behaviour of checking one's phone. The term "addiction" in this context refers to compulsive behaviour driven by the desire for these dopamine rewards. Unlike healthy engagement, where users can disconnect from digital devices, addiction manifests as a constant need to engage. Users often report feelings of anxiety or FOMO (fear of missing out) when unable to check their phones, revealing the stronghold that these designs have on our psychology. Key differentiators between healthy use and addiction include the time spent on apps, the frequency of checking notifications, and the impact on real-life activities. While social media was initially designed to connect people, its features now prioritize continuous engagement over healthy digital consumption.

How is mobile made?

A variety of raw materials are used for making telephones. Materials range from glass, ceramics, paper, metals, rubber and plastics. The primary components on the circuit board are made from silicon. The outer housing of the phone is typically made of a strong, high-impact resistant polymer. In the modern digital age, social media apps have become an integral part of daily life, revolutionizing the way we connect, share, and consume information. However, this rapid integration has also raised concerns about excessive usage and addiction. This article delves into the underlying factors contributing to social media addiction, particularly the role of design elements and user behaviour, alongside an exploration of the most popular platforms where users spend the majority of their time. In the modern digital age, social media apps have become an integral part of daily life, revolutionizing the way we connect, share, and consume information. However, this rapid integration has also raised concerns about excessive usage and addiction. This article delves into the underlying factors contributing to social media addiction, particularly the role of design elements and user behaviour, alongside an exploration of the most popular platforms where users spend the majority of their time. Understanding Social Media Addiction. Social media addiction is characterized by an excessive, compulsive engagement with social media platforms, often resulting in negative consequences for users' personal, academic, or professional lives. It is not simply heavy usage, but an inability to reduce time spent on these platforms despite the desire to do so. The key components contributing to addiction include:

1. Psychological Reinforcement: The need for social validation, attention, and belonging keeps users hooked, creating a feedback loop.

2. FOMO (Fear of Missing Out): Users feel compelled to stay connected and updated, fearing they might miss important events or trends.

3. Reward Mechanisms: Likes, shares, comments, and views serve as dopamine triggers, offering instant gratification and keeping users coming back for more.

4. Intermittent Rewards: Much like gambling, the unpredictability of notifications or interactions can be addictive, as users become eager to check for new developments.

Design Elements Fueling Addiction

Many of the design choices in social media apps are intentionally created to maximize user engagement and retention. Here are some design elements that contribute significantly to user addiction:

Infinite Scroll: Platforms like Instagram, Facebook, and TikTok use infinite scroll functionality, allowing users to keep swiping and engaging with content endlessly without any natural stopping point. This uninterrupted flow of content leads to extended usage without awareness of time passing.

1. Notifications: Push notifications are a powerful tool to bring users back to apps. Social media apps frequently notify users about new interactions, updates from friends, or trending topics. The fear of missing out on these updates compels users to open the app repeatedly throughout the day.

2. Personalized Feeds and Algorithms: Algorithms curate content based on users past behaviour, presenting them with highly relevant and engaging posts. This personalized content keeps users engrossed for longer periods, making it difficult to stop scrolling.

3. Gamification: Many platforms have adopted gamification techniques, such as Snapchat streaks, where users are rewarded for consecutive days of engagement. These techniques create a sense of obligation to maintain a digital "streak" or achieve virtual rewards.

4. Social Comparison Features: Social media apps encourage users to compare their lives with others by showcasing carefully curated content. This increases the desire for validation through likes and shares, fueling further engagement.

5. Content Auto-play: TikTok and YouTube implement auto-play features that start the next video immediately after the current one ends. This feature takes advantage of users' reduced ability to make conscious decisions to stop browsing, prolonging their time on the platform.

The Role of User Behaviour: In addition to design elements, user behaviour plays a critical role in fostering social media addiction. Users often engage with these platforms as a way to escape boredom, avoid social interaction in real life, or seek out emotional support. Over time, this behaviour becomes habitual, with users spending increasing amounts of time online as a coping mechanism. Moreover, the tendency to use multiple social media apps simultaneously intensifies the issue. Many users bounce between different platforms Facebook, Instagram, Twitter, TikTok, and Snapchat leading to prolonged digital exposure throughout the day. The need for constant validation, fueled by the pursuit of likes, comments, and followers, further entrenches addictive behaviours.

Data Collection: Most Time-Consuming Social Media Apps

To understand which social media platforms users spend most of their time on, we can collect data through surveys, app usage statistics, and social media reports. Here's a possible approach to gather data:

1. Survey Distribution: A survey can be distributed among various demographic groups, asking questions such as:

1. How many hours do you spend on digital platforms daily?
 - 0-1 hour
 - 1-2hour
 - 2-3hour
 - More than 3 hours
2. On a scale of 1 to 5, how often do you feel compelled to check notifications from social media?
 - Not at all
 - Often
 - Very often
 - Not often
 - Not very often
3. Have you ever found yourself mindlessly scrolling through content?
 - Yes
 - No
4. How often do you engage with content that has been personalised for you?
 - Never
 - Often
 - Very often
 - always
5. Are you aware of the design features that contribute to addictive behaviours?
 - Yes
 - No
6. Do you feel these features affect your daily life?
 - Yes
 - No
7. Have you experienced any negative consequences from excessive engagement with digital products?
 - Yes, if yes describe
 - No
8. What platform do you find the most addictive? Why?
 - Instagram
 - YouTube
 - Moj

- Whatsapp
- Other social media apps

2. App Usage Analytics: Using tools like Apple's Screen Time or Android's Digital Wellbeing, users can track their time spent on social media apps and report the data. This would give insight into specific time usage patterns across different platforms.

Secondary Data from Reports: Platforms such as Statista, Sensor Tower, or Hootsuite provide reports on social media usage statistics. For example, the latest data shows that TikTok, Instagram, and YouTube are among the top platforms where users spend the most time, with each of them implementing design elements that keep users hooked.

3. Methodology: To explore user addiction to social media apps and the role of design elements in fostering engagement, a survey was conducted among various age groups using Google Forms. The survey aimed to assess user behavior, time spent on social media, awareness of addictive design features, and the perceived impact on daily life.

SURVEY DESIGN & DATA COLLECTION

The survey was structured with both quantitative and qualitative questions to gather comprehensive insights. It included multiple-choice questions, Likert scale responses, and open-ended questions to understand user experiences with social media platforms like Instagram, TikTok, YouTube, and Facebook. Key areas covered in the survey included:

1. Time Spent on Social Media: Respondents reported their daily usage duration.

2. Engagement Patterns: Questions assessed frequency of notifications checked, interaction with personalized content, and experience of mindless scrolling.

3. Awareness of Addictive Features: Participants indicated whether they were aware of design elements such as infinite scroll, notifications, autoplay, and social validation mechanisms.

4. Psychological and Social Impact: The survey examined whether respondents experienced negative consequences due to excessive social media use, such as anxiety, reduced productivity, or sleep disturbances.

Sampling & Participant Demographics: The survey was distributed through online platforms to ensure diverse participation across different age groups. Respondents included teenagers (13-19 years), young adults (20-35 years), middle-aged individuals (36-50 years), and older adults (50+ years). This diversity helped in identifying trends in social media usage across different generations.

Data Analysis: The collected responses were analyzed using descriptive statistics and qualitative analysis to identify behavioral patterns and common trends. Comparative analysis was conducted to observe variations in social media engagement across age groups. Responses indicating extreme dependence on social media were examined further to understand the psychological and social implications of addictive app designs.

Various findings and Social media apps

Based on available data and surveys, the following platforms are known for their high engagement rates and user time spent:

TikTok: TikTok's short-form, algorithmically curated videos, combined with the auto-play feature, lead users to spend hours on the app without realizing it. The average user spends about 95 minutes per day on TikTok.

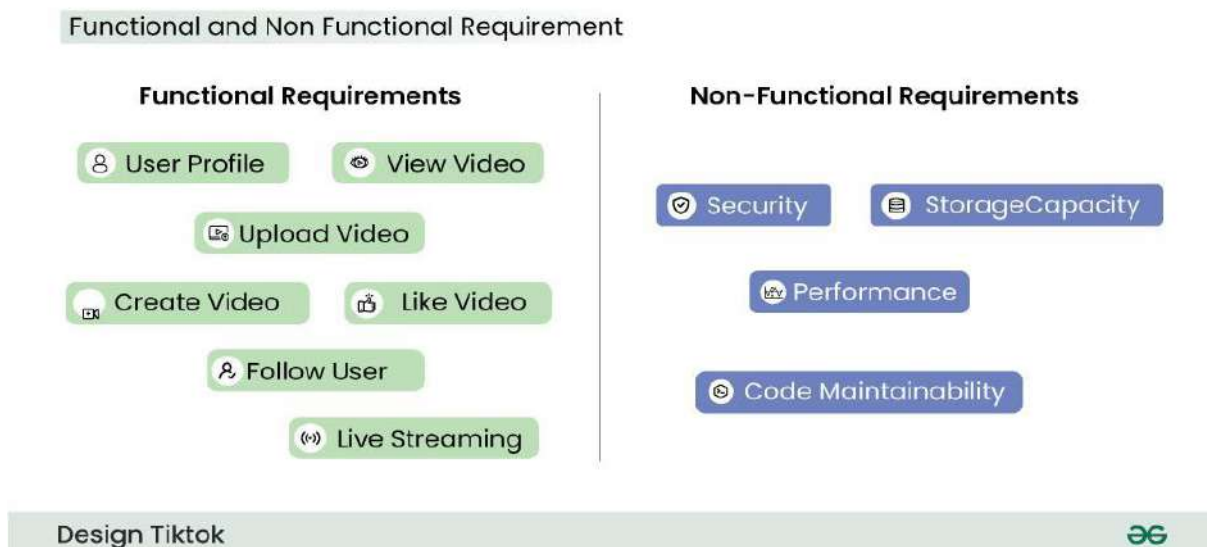


Fig 1: Patterns and design of Tiktok

Functional Requirements for TikTok System Design

- **User Profile:** Uploading and streaming short video clips.
- Creating and sharing video content.
- Following user-profiles and exploring curated video feeds.
- Liking, disliking, and commenting on videos.
- Discovering new videos based on personalized recommendations.

Non-Functional Requirements for TikTok System Design

Performance: Specify the maximum acceptable time for the app to respond to user interactions, such as uploading a video, loading the For You Page, or applying filters/effects.

Security: Specify encryption standards for protecting user data during transmission and storage.

Storage Capacity: Specify the maximum amount of data (videos, images, user accounts) the system should be able to store.

Code maintainability: Specify coding standards and practices to ensure that the codebase remains maintainable over time.

Reliable: Highly available and reliable system

Latency: Low latency for real-time video streaming

Scalability: Highly scalable to handle large read/write volumes

Streaming & Comments: Eventually consistent streams and comments

Instagram: With its infinite scroll, stories, and reels, Instagram captures a large portion of users' time. The average user spends around 53 minutes per day on Instagram.

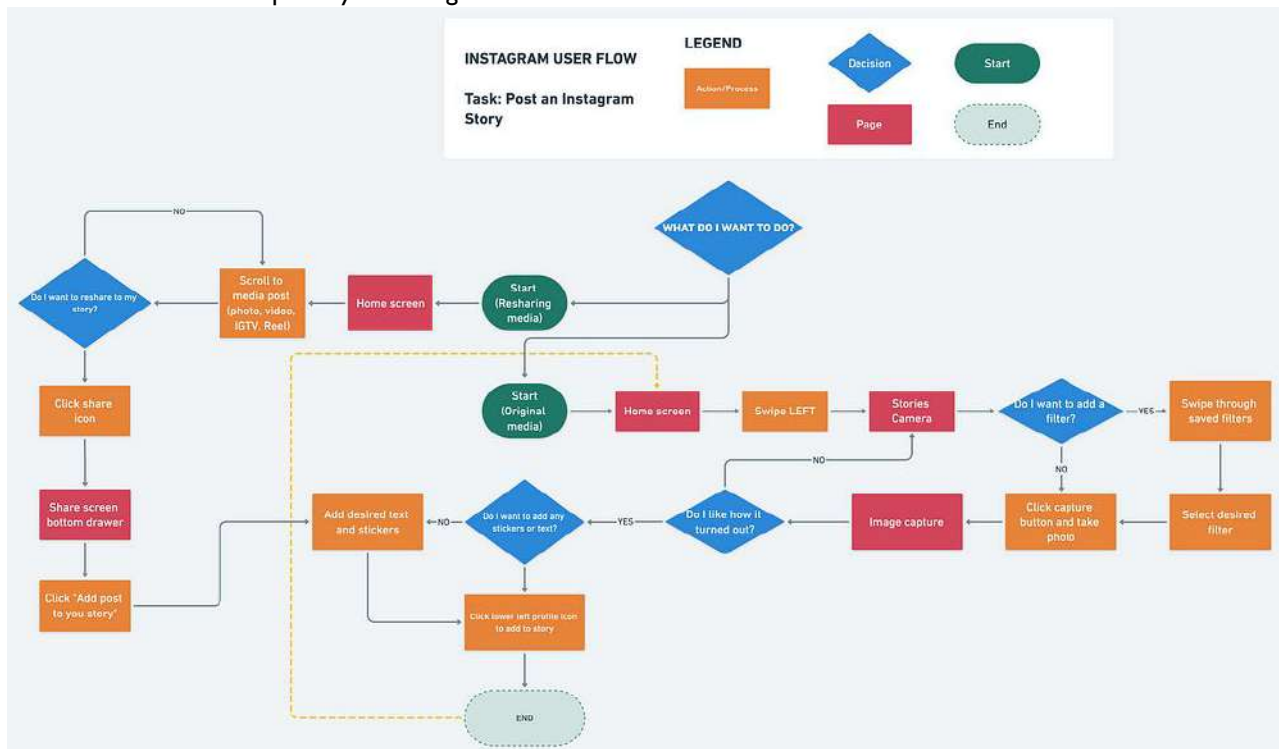


Fig 2: Instagram User flowchart

Shedding lights on Instagram: How it works?

It's hard to trust what you don't understand. We want to do a better job of explaining how Instagram works. There are a lot of misconceptions out there, and we recognize that we can do more to help people understand what we do. Today, we're sharing the first in a series of posts that will shed more light on how Instagram's technology works and how it impacts the experiences that people have across the app. This first post tries to answer questions like "How does Instagram decide what shows up for me first?"; "Why do some of my posts get more views than others?"; and "How does Instagram decide what to show me in Explore?"

What is "the algorithm"?

One of the main misconceptions we want to clear up is the existence of "The Algorithm." Instagram doesn't have one algorithm that oversees what people do and don't see on the app. We use a variety of algorithms, classifiers, and processes, each with its own purpose. We want to make the most of your time, and we believe that using technology to personalize your experience is the best way to do that. When we first launched in 2010, Instagram was a single stream of photos in chronological order. But as more people joined and more was shared, it became impossible for most people to see everything, let alone all the posts they cared about. By 2016, people were missing 70% of all their posts in Feed, including almost half of posts from their close connections. So we developed and introduced a Feed that ranked posts based on what you care about most. Each part of the app Feed, Explore, Reels uses its own algorithm tailored to how people use it. People tend to look for their closest friends in Stories, but they want to discover something entirely new in Explore. We rank things differently in different parts of the app, based on how people use them.

How Instagram ranks Feed and Stories

Over the years we've learned that Feed and Stories are places where people want to see content from their friends, family, and those they are closest to. With any ranking algorithm, how it works can be broken down into steps. We start by defining the set of things we plan to rank in the first place. With Feed and with Stories this is relatively simple; it's all the recent posts shared by the people you follow.

There are a few exceptions, like ads, but the vast majority of what you see is shared by those you follow. Next we take all the information we have about what was posted, the people who made those posts, and your preferences. We call these “signals”, and there are thousands of them. They include everything from what time a post was shared to whether you’re using a phone or the web to how often you like videos. The most important signals across Feed and Stories, roughly in order of importance, are:

Information about the post: These are signals both about how popular a post is – think how many people have liked it and more mundane information about the content itself, like when it was posted, how long it is if it’s a video, and what location, if any, was attached to it. Information about the person who posted. This helps us get a sense for how interesting the person might be to you, and includes signals like how many times people have interacted with that person in the past few weeks.

Your activity. This helps us understand what you might be interested in and includes signals such as how many posts you’ve liked.

Your history of interacting with someone. This gives us a sense of how interested you are generally in seeing posts from a particular person. An example is whether or not you comment on each other’s posts.

From there we make a set of predictions: These are educated guesses at how likely you are to interact with a post in different ways. There are roughly a dozen of these. In Feed, the five interactions we look at most closely are how likely you are to spend a few seconds on a post, comment on it, like it, reshare it, and tap on the profile photo. The more likely you are to take an action, and the more heavily we weigh that action, the higher up you’ll see the post. We add and remove signals and predictions over time, working to get better at surfacing what you’re interested in. There are a few cases where we try to take other considerations into account. One example of this is where we try to avoid showing too many posts from the same person in a row. Another example is Stories that were “reshared” from Feed: until recently, we valued these Stories less, because we’ve heard consistently that people are more interested in seeing original Stories. But we see a swell of reshared posts in big moments – everything from the World Cup to social unrest – and in these moments people were expecting their Stories to reach more people than they did, so we stopped. We always want to lean towards letting people express themselves, but when someone posts something that may jeopardize another person’s safety, we step in. We have Community Guidelines that apply not only to Feed and Stories, but to all of Instagram. Most of these rules are focused on keeping people safe. If you post something that goes against our Community Guidelines and we find it, we take it down. If this happens repeatedly, we may prevent you from sharing, and eventually we might suspend your account. If you think we’ve made a mistake – and we do make mistakes – you can appeal by following these steps. Another important case to call out is misinformation. If you post something that third-party fact checkers label as misinformation, we don’t take it down, but we do apply a label and show the post lower in Feed and Stories. If you’ve posted misinformation multiple times, we may make all of your content harder to find.

YouTube: YouTube’s auto-play and content recommendation system encourage prolonged usage. The platform is particularly addictive for video content consumption, with the average user spending about 74 minutes per day.

How YouTube is designed?

Banner image: The banner image is the background header at the top of your channel page. It should be 2048 x 1152 pixels with a 16:9 aspect ratio, or at least 1235 x 338 pixels for text and logos. The image should be 6 MB or less. The banner should include your channel name, type, program schedules, tagline, and social media links.

Channel art image: The ideal size for a YouTube channel art image is 2560 x 1440 pixels. The safe area that will appear on all devices is 1546 x 423 pixels in the centre.

Brand representation: Each element of your channel, including the banner, icon, and video thumbnails, should represent your brand and help your channel stand out.

Logo: The YouTube logo uses a custom font and colours to convey different meanings. Red symbolizes excitement and passion, white symbolizes harmony and purity, and black represents power.

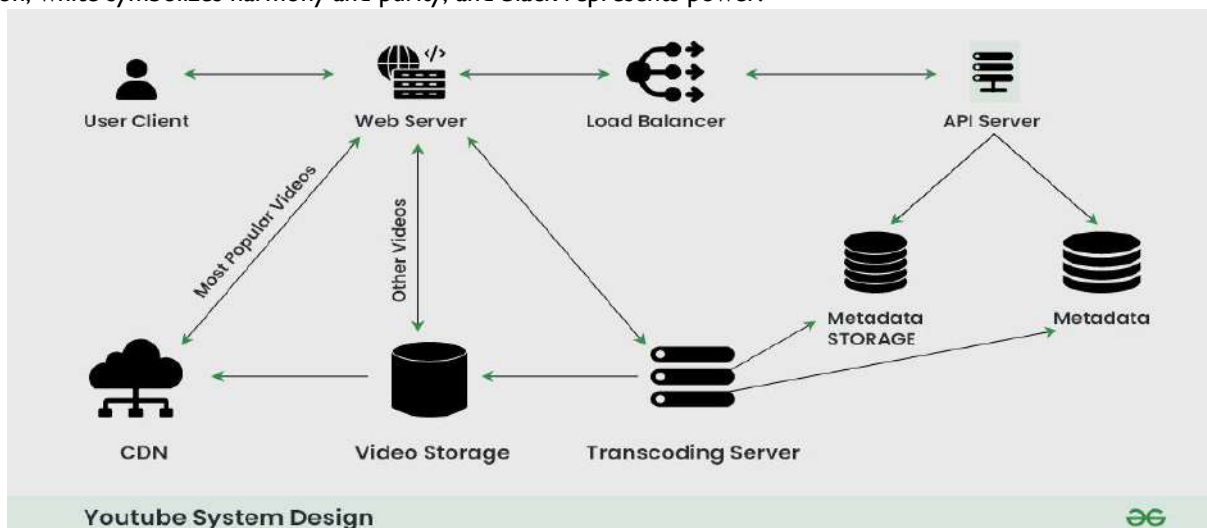


Fig 3: YouTube System Design

4. Facebook: Despite its aging demographic, Facebook still sees significant time spent by users, largely due to its news feed and social interaction features. Users spend around 33 minutes per day on the platform.

Snapchat: Snapchat's gamification techniques, such as streaks and quick snapshots, keep users returning. The average time spent on the app is 26 minutes per day.

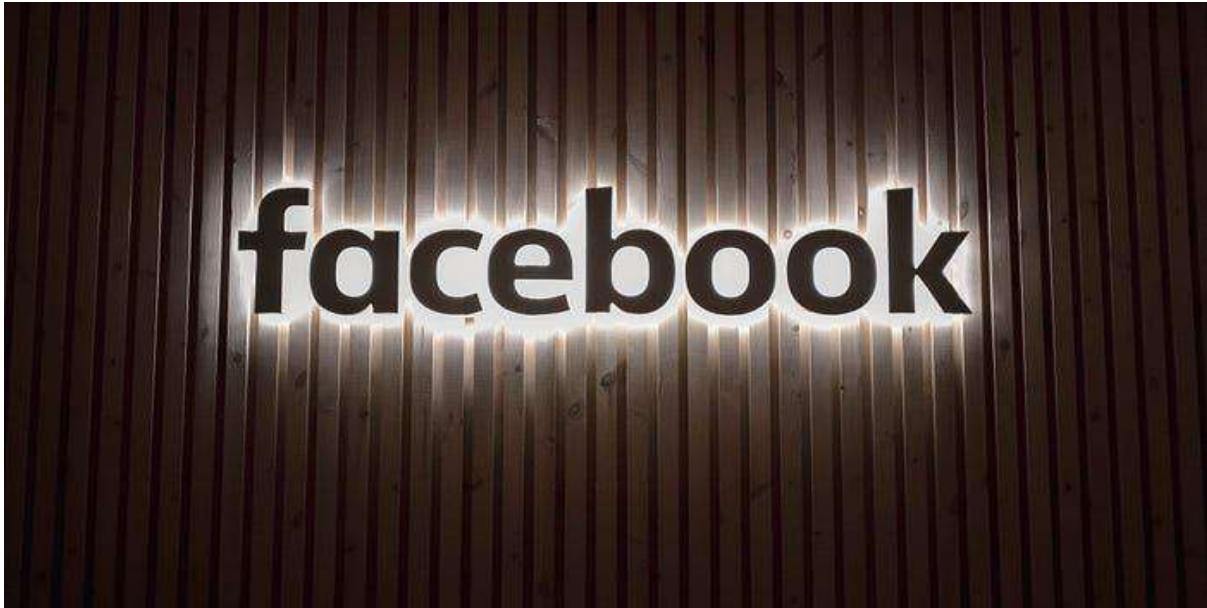


Fig 4: Facebook template

User Interface Design patterns are recurring components which designers use to solve common problems in user interface design. Various interfaces employ different design patterns in making their digital product easy to use and navigate. They range from global navigation bars to breadcrumbs, search bar, center stage, refined search, editable input fields, dropdown menus etc. Facebook just like every other digital product on the internet, uses a series of these design patterns. Before I take a quick dive into the prominent design patterns I noticed on the website, take a minute to look through the user interface and see if you can identify some of them.

The Page Structure: Firstly, there is a horizontal navigation bar with the logo and search box. This is fixed in position (sticky) so that it is readily accessible even if the user has scrolled all the way down. In addition, there is a vertical navigation bar at the left hand that gives the user access to variety of functionalities. The search box is visible too in case the user needs to search for something specific. On the search box, there is an input hint (placeholder) that tells the user that they can make use of the box for their search. Users can also search for friends, groups, pages etc., which makes navigation fluid within the site. When a person initiates a search, it suggests a manageable list of recent searches. But in a situation where the user is searching for something different, the website employs predictive hints instead. With each letter that is typed in the input field, the suggestions become even more refined, thereby making it is easier to find search results with less effort.

The Central Stage: This is the main area the users interact with. There is a side panel on the right that serves as a supportive navigation. On the central stage, the user views the page content (newsfeed), which is the main feature of the website. The entire newsfeed is a big scrolling list in itself as information are automatically updated. In addition, there isn't any form of pagination as users just scroll the feed infinitely.

Update Alerts: The website provides update alerts consisting of the activity of the user's friends such as status updates, news stories, new pictures, and new connections etc., so that they can stay updated easily. This makes the overall user experience more satisfactory as compared to the user manually seeking out these updates themselves. I can't imagine how frustrating it would be if users had to go from profile to profile to see what their friends have been up to. The website manipulates users into seeing sponsored ads. They are shown as native posts and displayed directly on the feed without the users' consent, thus tricking them into interacting with them. The "Sponsored" label at the top of the post lets the user know that they are ads. But most times, users don't even notice until they have viewed the post. Often times, they appear in form of prioritized advertisements from previous search history and personal information you've put out on the site, which can sometimes be good and scary. Although it is stated in the privacy policy, I find it disturbing that Facebook shares users information with Instagram. Lastly, the entire process of deactivating an account is long and frustrating. There isn't a clear and visible way of achieving that without navigating through so many pages. The aim is probably to get the user discouraged and have them give up midway.

Key Patterns and Designs That Promote Addiction

Certain design elements in social media platforms have been intentionally optimized to drive user engagement, often resulting in addiction. Below are the most common patterns responsible for phone addiction.

1. Variable Rewards

One of the most influential design patterns is variable rewards. This concept, rooted in behavioural psychology, refers to the unpredictable nature of receiving rewards.

On social media, these rewards come in the form of notifications, likes, or new content. The uncertainty of when or what users will receive keeps them coming back for more, much like a slot machine. Each time a user opens their app, they are met with something new this unpredictability fuels compulsive behaviour.

2 .Social Validation

Social validation is another critical component of social media design. Features like likes, comments, and shares tap into users' desire for approval and validation from peers. As users post photos or statuses, they are often driven to check their devices frequently to see how others react, reinforcing the loop of continuous engagement. The constant need for validation contributes to overuse and anxiety, as users become dependent on external recognition.

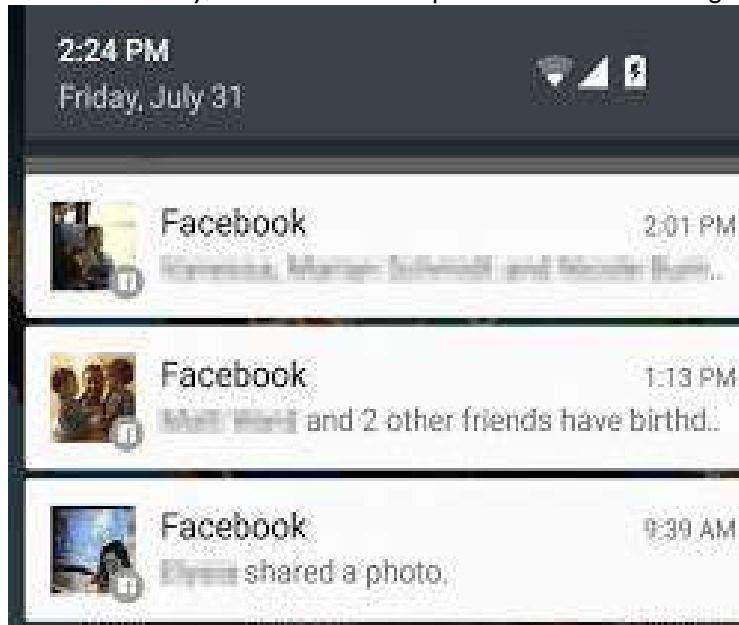


Fig 5: Notification on a social media app

3. Infinite Scroll

The infinite scroll design allows users to consume content without ever reaching an endpoint. On platforms like TikTok or Instagram, the endless feed ensures that users can continuously engage with new posts or videos. The absence of natural stopping points removes cues for users to disengage, causing them to lose track of time and remain hooked to the platform for extended periods.



Fig 6: Endless scroll interface on a social media app

4. Personalization Algorithms

Social media platforms use advanced personalization algorithms that analyze user behaviour to deliver tailored content. These algorithms curate content based on previous interactions, making it more likely that users will enjoy what they see. While personalization enhances user experience, it also makes the platform more addictive by constantly feeding users content that aligns with their preferences, keeping them engaged longer than intended.



Fig 7: Visually appealing social media app interface

Short-Form Content

- Bite-Sized Videos: Platforms like Instagram Reels and TikTok focus on short, engaging videos that cater to decreasing attention spans.

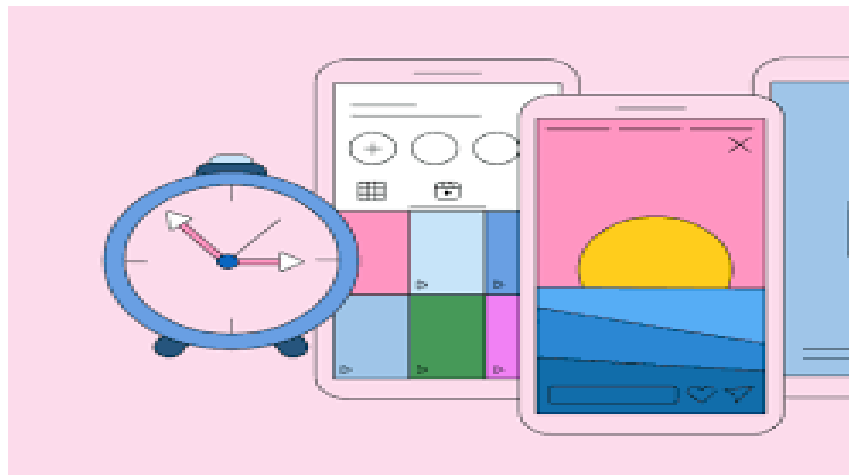


Fig 8: Shortform video on a social media platform

5. FOMO (Fear of Missing Out)

The phenomenon of FOMO is amplified through notifications, live updates, and stories that disappear after 24 hours. Social media platforms create a sense of urgency and scarcity, prompting users to check their phones frequently to stay up-to-date with what their friends or favourite influencers are doing. This fear of missing out on key moments or events further drives addiction.



Fig 9: Symptoms of FOMO

6. Personalization Algorithms:

- Tailored Content Feeds: Algorithms curate personalized content based on user behaviour, increasing engagement.
- Dynamic Recommendations: These algorithms continuously adapt to showcase relevant content.



Fig 10 : Personalized content feed on a social media app

8. Regular Content Updates:

Freshness Factor: Regularly updating content keeps the app dynamic and exciting.



Discover what's new

Fig 11: New feature announcement on a social media app

9. Community Building:



Fig 12: Community forum on a social media app

Fostering Interaction: Features like forums or shared challenges create a sense of belonging.

CASE STUDIES

1. Instagram : Instagram is a prime example of how variable rewards, infinite scroll, and social validation work in tandem to drive engagement. Every time users post photos, they are rewarded with likes and comments from followers, encouraging them to check their phones frequently. Instagram's Stories feature also capitalizes on FOMO, as users are enticed to view posts before they disappear within 24 hours. The platform's explore page, powered by personalized recommendations, ensures users are constantly fed content they are likely to enjoy. Despite its popularity, Instagram has been associated with several negative consequences. A study by the Royal Society for Public Health in the UK found that Instagram had the most negative impact on users' mental health among popular social media platforms, exacerbating feelings of anxiety, depression, and inadequacy.

2 . TikTok: TikTok's infinite scroll feature is one of the primary drivers of its addictive nature. Users can watch short, engaging videos back-to-back without any natural stopping point. TikTok's For You Page (FYP) uses an algorithm that presents content based on user preferences, making it hard to resist consuming video after video. The quick, bite-sized format of content on TikTok ensures that users are always within arm's reach of the next "hit," driving prolonged usage. TikTok's design has been so effective that the platform boasts some of the highest user engagement rates in the world. However, many users have reported spending hours on the app without realizing it, raising concerns about its impact on mental health and productivity.

3 .Facebook : Facebook employs a variety of tactics that blend personalized content, social validation, and variable rewards. From the news feed, which is curated based on user behaviour, to the like and share buttons, the platform continuously encourages users to stay engaged. Facebook's notifications system, which alerts users about friend requests, comments, or events, taps into the desire for social validation and connection. Despite being one of the oldest social media platforms, Facebook continues to hold sway over billions of users worldwide. However, the platform has also faced scrutiny for its role in perpetuating addiction and spreading misinformation, as users spend more time scrolling through their feeds without critically engaging with the content.

The initial plan of media platforms to keep users addicted to their phones revolves around several strategic design elements and marketing tactics that enhance user engagement and encourage compulsive usage. Here are the key aspects:

Key Strategies for User Engagement and Phone Addiction

1. Compelling Visual Design

- Eye-Catching Thumbnails: Platforms like Instagram Reels use vibrant and engaging thumbnails to grab attention instantly, encouraging users to click and watch.
- Vertical Video Format: This design choice caters to mobile users, creating a more immersive experience that feels natural and comfortable.

2. Short-Form Content

- Bite-Sized Videos: The emphasis on short, engaging videos (e.g., Reels lasting up to 60 seconds) aligns with decreasing attention spans, making it easy for users to consume content quickly and repeatedly.

3. Endless Scroll and Auto-Play Features

- Infinite Content Feed: The endless scroll feature encourages prolonged usage by presenting an uninterrupted stream of content. Auto-play functionalities keep users engaged without requiring any action on their part.

4. Social Validation Mechanisms

- Likes, Comments, and Shares: The design emphasizes social interactions through likes and comments, tapping into users' needs for validation and approval, which can lead to compulsive checking of notifications.

5. Personalization Algorithms

- Tailored Content Delivery: Algorithms analyze user behavior to curate personalized feeds, ensuring that users see content that aligns with their interests, thus increasing the likelihood of engagement.

6. Gamification Elements

- Challenges and Trends: Features like trending challenges encourage participation and sharing, creating a sense of community while also driving competition among users.

7. Notifications and Alerts

- Frequent Updates: Notifications about new likes, comments, or messages prompt users to check their phones regularly, reinforcing habitual engagement patterns.

8. Influencer Collaborations

- Peer Influence: Collaborations with influencers create aspirational content that attracts followers. Users are often motivated to engage with content that features personalities they admire.

9. Exclusive Content Offers

- Premium Access: Offering exclusive content or behind-the-scenes access can incentivize users to invest more time and money into the platform, fostering a sense of belonging and loyalty.

10. Cognitive Load Management

- Simple Interactions: The design minimizes cognitive load by allowing easy navigation and interaction, making it effortless for users to engage without feeling overwhelmed. To understand the key design elements that drive user engagement on Instagram Reels, it's essential to look at various features and strategies that enhance interaction and encourage users to create and share content. Here are the primary components:

Key Design Elements Driving Engagement

The first two seconds of an Instagram Reel are crucial for driving user engagement. Here's why:

Immediate Attention Capture

•Viewer Decision Point: In the initial moments of a Reel, viewers decide whether to continue watching or scroll past. Engaging content that captures attention quickly is essential to prevent users from losing interest and moving on to other posts.

Hook Strategies

•Effective Hooks: Using a compelling hook—such as an intriguing statement, question, or visual element can significantly increase retention rates. Hooks that provoke curiosity or promise valuable insights to encourage viewers to stay engaged throughout the video.

Content Quality

•High Engagement Signals: The algorithm favours Reels that maintain viewer interest. If users watch beyond the first few seconds, it signals to Instagram that the content is engaging, which can lead to broader exposure and increased reach.

Looping Effect

•Rewatch Potential: Short Reels (7-15 seconds) can loop, encouraging viewers to watch multiple times. This not only boosts view counts but also enhances engagement metrics, making the content more favourable in the algorithm's eyes.

1. Vertical Video Format

•User-Friendly Orientation: Reels are designed primarily for vertical viewing, which aligns with how users naturally hold their phones. This format maximizes screen space and creates a more immersive experience.

2. Strong Hooks

•Immediate Attention: Content creators are encouraged to capture attention within the first two seconds of a Reel. A compelling hook can significantly reduce skip rates, which is crucial for maintaining engagement and visibility in the algorithm..

3. Creative Tools and Effects

•Filters, Music, and Text: Instagram provides a variety of creative tools such as filters, effects, text overlays, and music tracks. Utilizing these features can make content more engaging and visually appealing, encouraging users to interact and share.

4. Authentic Content

•Relatability: Users are drawn to authentic and relatable content. Sharing unfiltered moments or real-life challenges fosters a sense of connection and encourages engagement through comments and shares.

5. Use of Trending Music

•Enhanced Discoverability: Incorporating trending music or sounds can increase the likelihood of a Reel being discovered by new audiences. Music sets the tone and can enhance emotional engagement with the content.

6. Calls to Action (CTAs)

•Guiding User Interaction: Including clear CTAs in captions or overlays encourages viewers to engage further whether that's liking, commenting, or following a link in the bio. A focused approach with a single CTA can prevent overwhelming viewers while still driving action.

7. Engagement Features

•Interactive Elements: Instagram allows for interactive stickers that can be used in Reels, such as polls or questions. These features invite viewers to participate actively, enhancing their connection to the content.

8. Optimal Posting Times

•Maximizing Visibility: Posting Reels when your target audience is most active increases the chances of engagement. Analyzing Instagram Insights can help identify these peak times.

9. Behind-the-Scenes Content

•Transparency Builds Trust: Sharing behind-the-scenes glimpses into brand operations or personal stories can humanize a brand, making it more relatable and fostering deeper connections with followers.

10. Collaborations and Challenges

•Community Engagement: Partnering with influencers or hosting challenges encourages broader participation and sharing among different audiences, expanding reach and engagement opportunities.

Benefits

Social media can be a tool for connecting with others, sharing information, and marketing. It can also be a way for businesses to build relationships with customers and increase brand awareness.

Responsible use

It's important to balance online interactions with real-life experiences and to be mindful of how much time you spend on social media. Social media is attractive but might disturb the real life yet it is important for each individual to maintain a balanced and designed life. Spending more time on social media can lead to anxiety, depression and various other health problems. It is the responsibility of each individual to seek the necessary information and not to get entertained by the false ones because most of them tend in making up likes and comments. There are people who spend hours together in various social media apps. They might feel that they have gained something but they are loosing their mental and physical health.

CONCLUSION BASED ON FINDINGS

The survey results provided substantial evidence that social media addiction is largely influenced by design elements such as infinite scrolling, autoplay, and personalized recommendations. Younger users were found to be more susceptible to addictive patterns, particularly due to the fear of missing out (FOMO) and social validation mechanisms embedded in platforms. Based on the survey findings, it is evident that while social media enhances connectivity and entertainment, its addictive nature raises concerns about digital well-being. As social media platforms continue to grow, so too do the design elements that drive user engagement and addiction. From variable rewards to infinite scroll, these patterns leverage psychological principles to keep users hooked. While these designs contribute to the platforms' success, they also come with ethical concerns. Excessive use of social media has been linked to anxiety, depression, and decreased productivity. As designers, developers, and users, it is crucial to advocate for healthier, more balanced digital experiences to mitigate the adverse effects of these addictive design elements. The design elements of Instagram Reels are strategically crafted to enhance user engagement through immersive formats, interactive features, and community-driven content. By leveraging these aspects effectively, creators can significantly boost their visibility and foster meaningful connections with their audience. Social media addiction is a growing concern, driven by both user behaviour and the intentionally addictive design elements of the platforms themselves. The combination of psychological triggers, infinite content loops, and personalized experiences creates an environment where users find it increasingly difficult to disconnect. As social media continues to evolve, it becomes essential for users to understand the factors at play and seek a healthier balance between online and offline interactions. Social media has both positive and negative effects on society, and it's important to be aware of both.

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