

Social Media and the Realms of Addictive Behavior

– An analysis on how and why social media apps try to keep you as addicted as possible and how iconet wants to confront the issue

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Abstract

For the majority of people around the globe, social media is a part of everyday life and indispensable in many areas. Currently, the social media system is run by a few profit-oriented companies that seek to make money off their users by trying to keep them on their service as long as possible while showing them as much advertising as possible. Therefore, specific mechanisms and techniques are used by app designers to keep the users hooked. As a result, statistics show that more than 210 million people suffer from internet and social media addiction. At the same time, far more people experience addictive-like behavior and spend more time online than they voluntarily want to. In this article, we explore the current system and the way it functions before presenting our own user-oriented, decentral and sustainable approach to social media, called iconet (interconnected networks), and why we believe it will improve the way social media is used.

I. Introduction

If you have a smartphone or laptop, chances are you tend to turn to it multiple times a day. It is impossible to imagine today's world without digital media. They are an important part of everyday life and therefore indispensable in many areas. For any concerns, issues or interests, you can find a matching counterpart online, whether it is a cooking blog, an app where you can share your favorite photos or the traditional messenger service to keep in touch with your friends and contacts. Currently, in times of a global pandemic, social media is gaining more significance once again. Although they have many positive qualities and make our lives easier in a lot of ways, experts across the disciplines agree that the new media has both positive and negative effects on individuals and the society alike. One of the most striking problems with the use of online media nowadays is the one of addiction and the manifestation of addiction-like behavior. As shown by statistics, there are more than 210 million people that suffer from internet and social media addictions worldwide (Longstreet &

Brooks 2017). Related to our growing dependence on technology, these numbers only seem to increase continuously (ibid.). Social media addiction is the most common subset of internet addiction that deals specifically with social networking applications (Chen & Kim 2013). Some of the main drivers that studies identified to be responsible for keeping users addicted are a pursuit of diversion, self-presentation, and relationship building (Longstreet & Brooks 2017). Within the academic research body, it is controversially discussed when and at what frequency the consumption of social media leads to health and psychosocial damage (Grafen 2018), but there is no doubt that there are many negative side effects connected to the overuse of social media applications. While depression can be a severe consequence (Twenge & Campbell 2018), there are also lighter symptoms such as “poor quality sleep, excessive mental occupation, recurrent thoughts to control and limit the use, [...] and to desire while not being online” (Tutgun-Ünal & Levent 2015), that showcase the full extent of addictive behavior.

Of course, not everyone who frequently spends time on their smartphone is automatically addicted. Oftentimes, using apps on your smartphone is just a form of occupying your free time. But still, a lot of people would like to reduce their online time for their own sake and well-being, but do not really know how to get rid of that habit of automatically grabbing their phone and being caught up in mindless scrolling. Studies have repeatedly revealed that there is a reason for social media applications being as addictive as they are. Most of the apps you find in your app store have been purposefully designed to continuously grab your attention with various psychological tricks: “App makers are using deliberate techniques to attract your attention. They aren't simply relying on you to come to them whenever you have downtime” (Hartmans 2018). Responsible for this are profit-oriented reasons and structures. In the current system, most applications are running on advertisement-based financing models, meaning applications make more money the more time the user spends using and interacting with them because they can show them more ads throughout that time. This is not even happening in secret. It is an openly known business model used by many popular apps. Chamath Palihapitiya, who was working as an executive at Facebook from 2007 to 2011, said in an interview: “So, we want to psychologically figure out how to manipulate you as fast as possible and then give you back that dopamine hit. We did that brilliantly at Facebook. Instagram has done it. WhatsApp has done it. You know, Snapchat has done it. Twitter has done it” (Orlowski 2020: 0:29:05).

In this article we will first show which mechanisms are used by application designers to manipulate users' habits. In doing so, we will highlight problems that arise when design decisions are based primarily on the interests of platform operators rather than those of the users (chapter II). Following this, we will analyze the current system to show the reasons why this imbalance arose in the first place (chapter III). Finally, we will explain how the proposed *iconet* system approaches the problems quite differently and focuses on the concerns of the users (chapter IV), before giving a short summary of the findings (chapter V).

II. Mechanisms and techniques to cause addictive behavior

The following is an overview of the specific techniques used by social media applications to promote addictive behavior:

- Almost all popular apps read out the entire usage behavior of their users and create ***psychological profiles*** on this basis. This enables them to make targeted decisions on who gets to see what. This makes users vulnerable and this vulnerability is exploited to keep the user hooked in any given mood and situation (Valakunde & Ravikumar 2019).
- Most of the apps frequently send ***push notifications*** to the user's device. What appears to be a useful service, turns out to be a highly ingenious technique to keep the users involved and checking their phone in anticipation of something happening at any moment (Hartmans 2018).
- Once logged into an app, users often find an ***endless feed*** feature that automatically provides them with infinite content while very little action is required. This way, apps keep their users seemingly busy and a lot of people end up using the service for way longer than they intended to (Montag et al. 2019).
- This is also reinforced by a ***sense of boundless possibilities*** and the feeling that there is always something new and unknown to discover. Users can easily get lost and spent hours navigating through all the content that gets constantly recommended to them based on what they were viewing before.
- On the other hand, ***time-limited functionality***, i.e., content only available for a short amount of time, supports a feeling of the so-called FOMO ("fear of missing out") phenomenon. If something is only available for a short while, it can provoke a certain urge to immediately check it, because it may be gone at a later point already (Hartmans 2018).

- Another important concept is the one of **reward systems**. It can be found in various contexts, e.g., in smartphone gaming apps, where users get some extra bonuses when they come back multiple days in a row or play a certain amount of time (Hartmans 2018).
- The same feeling of satisfaction is exploited with the **slot machine method**, where intermittent variable rewards are used. Like in a casino, the user knows that they will be rewarded, just not when exactly, because there is no particular pattern: “If you want to maximize addictiveness, all tech designers need to do is link a user’s action (like pulling a lever) with a variable reward. You pull a lever and immediately receive either an enticing reward [...] or nothing. Addictiveness is maximized when the rate of reward is most variable” (Harris 2016). For example, in a lot of apps, when you swipe your finger downward, a spinning wheel indicates that the app is loading more content. You don't know what you're getting, but you're hoping to see something new that is of interest for you. It creates an excitement for what may come (ibid.; Brueck 2019).
- Some apps also use methods of **gamification** to retain their users. Hereby, game elements are added to non-game contexts and activities to make boring or unpleasant tasks more fun and enjoyable and therefore more engaging. While the original goal is to make something more appealing, it can at the same time easily lead to addictive behavior, because “[l]eveling up, gaining a reward, getting feedback or achieving something all gives you that little rush” (Brown 2021) you want to experience again and again.
- **Timer functions** are often in use, where users have to wait for a certain time until they are able to continue using the app and where the alternatives are either watching a row of advertisements or paying for premium access. This can foster addiction because the waiting time contributes to the build-up of suspense and expectation, similar as is the case with cliffhangers (Hartmans 2018).
- Last, but not least, social media apps often provide users with a **memory log** of their life, be it with the pictures they uploaded a while ago or with a reminder of certain experiences they shared online. Social media apps capitalize from this phenomenon of users seeing their social media app as some kind of diary, because when they open it to see the presented memories and then shift their attention to the other content, they get hooked by the app once again (Hartmans 2018).

Dealing with all these techniques and methods oftentimes leaves the question of what to make of this knowledge and whether it means you have to abandon all of social media, as in an all or nothing situation. We at iconet think, that this should not be the only option if you want to avoid getting utilized by these techniques. We also think, it is one more important reason to rethink and revolutionize the way we see and use social media. We want to give the user more control over what they get to see online and therefore how they want their behavior to be.

III. Issues with the current situation

Before we present how iconet approaches this problem, we take a closer look at the current system. Here, we can identify some structural problems that are responsible for the lack of options users have in regards of being in control of their social media experience.

1) THE NETWORK EFFECT

Right now, it is not possible to connect with users who do not use the same application as oneself. That makes it difficult for users to choose their favorite social media application independently from others, because if you decide to get away from apps that are popular, you are no longer connected with your friends and contacts. Usually, people stay on the app that most people use, regardless if it offers the best functionalities. This phenomenon is called the network effect (Banton 2021). A monopoly-like situation is created in which only a few individual platforms comprise the market. This has two different impacts on the problem:

- a Sole decision-making authority: Those platforms' great market power entitles few corporations to govern the entire digital communication and networking system. They decide which technologies and functionalities are provided to the users and fully define the user experience. And since all these decisions are left to them, they opt for the mechanisms described above, which maximize the users screen time.
- b Lack of alternatives: Even if one recognizes the problem, it is difficult to switch to other applications because of the previously mentioned problem of the network effect. In the current system it is not possible to use another application and still stay connected to your personal network. Because of a lack of personal connections, alternative applications are not as valuable for the user. Few people make the commitment to leave their friends and contacts behind. Most decide to stay with the application that does not share their values instead.

The network effect is a structural problem within the current system. It is based on the systems' property, that only users with the same application can interact with each other. In another system, in which users can interact and connect with different applications, those problems will not arise.

2) CONFLICT OF INTEREST BETWEEN PLATFORM OPERATOR AND USER

Platform operators have a strong interest in maximizing their user's usage time. Because the more time users spend in an app, the more advertisements are shown to them and the more money is earned by the platform. The user, on the other hand, simply wants to benefit from the services, such as communication, inspiration and entertainment. This does not necessarily equate to a maximized usage time. This conflict of interests is inherent in the current system. However, it only applies to advertising-based business models.

3) MISSING MODULARITY

The platforms provide an environment which offers multiple features to the users at once. They come back to these platforms for various reasons, e.g., personal communication, checking recent posts of contacts, news updates, inspiration and entertainment. All those activities are enabled by a prebuild feature set within an application. But there is no possibility to disable single features which may have a negative effect on single individual users. This is especially of concern to users who want to better control their online habits. They can only decide between two options, the first one being to stop using the application completely. In this case, their access to all features, including personally essential ones, is lost. Which is why most users will opt for the second option: Keep using the application as a whole, even with the undesired features. In the current system, most applications lack modular concepts that allow users to individually choose which features they want to use and which they do not.

IV. Solutions and approaches to change the way we use social media

After examining the current situation in detail, this chapter addresses the changes needed to find appropriate answers to the afore mentioned problems - namely the network effect, the conflict of interest between platform operator and user, and the missing modularity.

It is the same with social media applications as it is with any other product on the market. Different people find different values in them. Some appreciate the distraction or inspiration they can get online; others prefer the aspect of social networking and messaging.

Therefore, much would be improved if users were able to choose their preferred network themselves and independently, regardless of the restrictions and limitations described above. So far, the possibility to make a conscious decision in this respect, is not given. The platforms we use dictate the functions and possibilities that are available to us. Users are limited to whatever the application has to offer. But imagine what it would be like to be able to tailor your online experience exactly to suit you individually. For example, you might want to see all the pictures of your friends, but you're not interested in an endless feed that shows you everything else. You could avoid every feature that you don't like or that fosters your addiction and concentrate on the content and functions you really want to see and use. So, if everybody had the opportunity to individually select the functions they prefer and expect from a certain platform, everyone would benefit as a whole.

This approach is an integral part of our vision at iconet. iconet is a web architecture that allows different platforms to be interconnected. Meaning, that users from disparate apps and platforms can freely interact, share, and connect with each other without being registered with the same social media service. This interconnectivity enabled by iconet prevents the network effect from occurring in the first place by allowing users to choose their applications independently from one another. They have the freedom of choice to switch to alternative applications while still being connected to all their friends and contacts. This, in turn, also solves the implicated problems. Users do not have to choose applications developed by monopolistic companies. Alternative applications become just as viable when the personal network is conserved. Users with special requirements can use applications that are particularly well suited to their needs or offer a modular range of functions. This enables the user to make conscious decisions, reflect on their habits, examine the tricks used by apps to manipulate their screen time behavior, and consequently take appropriate action, such as adapting the software they use to their personal needs. Also, by opening up the market for alternative applications, increased competition is leading to conditions in favor of users across all platforms.

In addition, iconet also offers a solution to the conflict of interest between users and network providers. Our web architecture inherently defines a separation of responsibilities between the personal client application used on the user's device and the platforms that provide network and content functionalities. If the client is not operating on an advertising-based funding model, it has no incentive to maximize users' screen time. The client is supposed to be a tool that is free of any outside interests and exclusively provides utility to the user. Platforms, on the other hand, can focus entirely on providing engaging content to the

users. But with the separation of responsibilities, they cannot overstep their boundaries by abusing the users' weaknesses. E. g., they won't be able to generate detailed usage profiles and show unwanted notifications, recommendations or advertisements.

Focusing on the growing problem of social media addiction and addictive behavior, we believe that our system can bring about a serious improvement for our society in this matter as well. After presenting our solution approaches in broad terms, we want to give some concrete examples and share ideas on how applications can look like that value the user's attention without trying to capitalize from their usage time:

- If users can disable instant notifications for non-urgent content, their attention won't be drawn to the phone if not necessary. Here, every user should be able to decide for themselves what they define as important or urgent.
- One option in this regard could be the one of notification bundling, where all notifications pop up on the smartphone once a day at a fixed time. It's a similar principle to getting the physical mail delivered to your home every morning. This can create a feeling of certainty and assurance and helps preventing checking the phone all the time in hope of something to happen.
- There can be a feature of usage tracking to provide insights into individual patterns and habits connected with the use of social media and social networking to monitor individual behavior. Of course, these statistics are only visible to the user themselves. Every user can choose what he wants to know about their habits, e.g., time they spend online, on certain applications or any other category. This way, everyone can make their own informed decisions about how to proceed with their social media behavior.
- Instead of having a default endless feed, users can be introduced to the highlight feed where they can discover precisely what they want to see. This can be content and recommendations uploaded by specific contacts, news and posts related to one specific topic or from a certain time period. The important thing here is that the feed ends once the self-selected content has been shown and therefore does not continue forever.
- Similar, there is the possibility of voiding constant recommendations that show you ten new video suggestions while you are still busy watching the latest one. This helps focusing on the current content and supports a conscious decision-making process as well.
- Another keyword is that of planned consumption where every user can decide for themselves how they want to spend their time online. E.g., a certain amount of time

can be attributed to studying while the rest of the day can be used for enjoying other content, like playing games or exploring pictures.

It is important to note that not every app within iconet needs to be designed this way, but users who prefer such apps will be enabled to use applications that have developed or implement such principles. In other words, applications do not have to look like this for everyone, but it can be a possible option for people who feel like they want to spend less time online or change their social media behavior in general.

V. Summary

In this paper, we have addressed the problem of social media addiction and addictive behavior and discussed it against the background of the current system and its addiction-promoting structures. After an overview was given of the specific techniques and mechanisms used by app developers and platforms to benefit from their users in a profit-oriented way, the three main problems with the current system were elaborated: the network effect, conflict of interest, and missing modularity. Following this analysis, it was shown which changes are needed to improve the system and how iconet plans to implement these and thereby minimize addictive behavior as well by giving more control to the user themselves.

To conclude this article, we want to be clear that of course everyone can and should spend their time online the way they want. Procrastinating or “wasting” time online without any specific goal is completely fine, and not automatically a bad thing, as long as it is a free and conscious decision of the user themselves. Everyone should be able to be in control of their online behavior, without getting subconsciously influenced by the application and its algorithms. But right now, maximizing usage time is crucial for a network's commercial expansion, because the more time spent on a platform the more money is created by advertisements. To develop and program communication technologies that are not profit-oriented and therefore do not have the goal of being addictive, a fundamental change of the current system is needed. We strongly believe that iconet contributes to this goal to a great extent, which is why we want to continue to hold an extensive discourse on how to take away the incentives for big companies to manipulate our habits in their favor.

For more information about iconet visit iconet-foundation.org

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