



Problematic smartphone use & Attention economy

Jana Blahošová



Autumn 2023

Current issues in research of media and audiences



01

PROBLEMATIC SMARTPHONE USE (PSU)

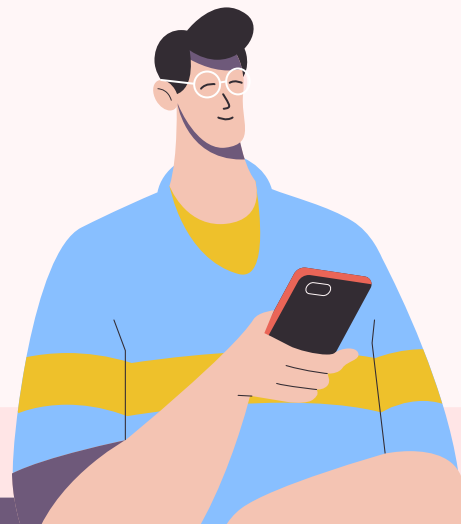
Digitální závislosti jsou nová pandemie, Čechy ničí především sociální sítě

**Translation:
Digital addictions are the new
pandemic, Czechs are destroyed
mainly by social media**





QUIZ



QUESTION 1



What percentage of the world's total population uses a mobile phone?

KEY NUMBERS ABOUT PHONES



68% of the global population

Use mobile phone (5.44 billion of people)

64.4% of the global population

Use internet (5.16 billion of people)

3 hours 46 minutes

Average daily time spent using
the internet on mobile phones

QUESTION 2



How much time do you spend on your mobile phone daily (in hours)?

WHY IT IS SO HARD?

RECALL BIAS

- Inaccurate or incomplete recollection of events by study participants

RAPID & FRAGMENTED USAGE

- Smartphones are typically used in rapid and fragmented ways throughout the day
- Hard to correctly estimate

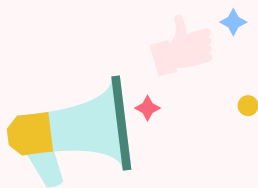
SOCIAL DESIRABILITY

- Respondents give answers to questions that they believe will make them look good to others
- Studies on sensitive topics (e.g., drug use, sexual behavior)



HOW ARE CZECH ADOLESCENTS USING THEIR PHONES?

- 12-months research, project FUTURE, WP4
- **201 adolescents, aged 13 to 17 years old**
- Special research app called IRTIS App that participants installed into their mobile phones



[REPORT LINK](#)



METHODS

May 2021



June 2022

1. burst
May/June

2. burst
September/
October

3. burst
January/
February

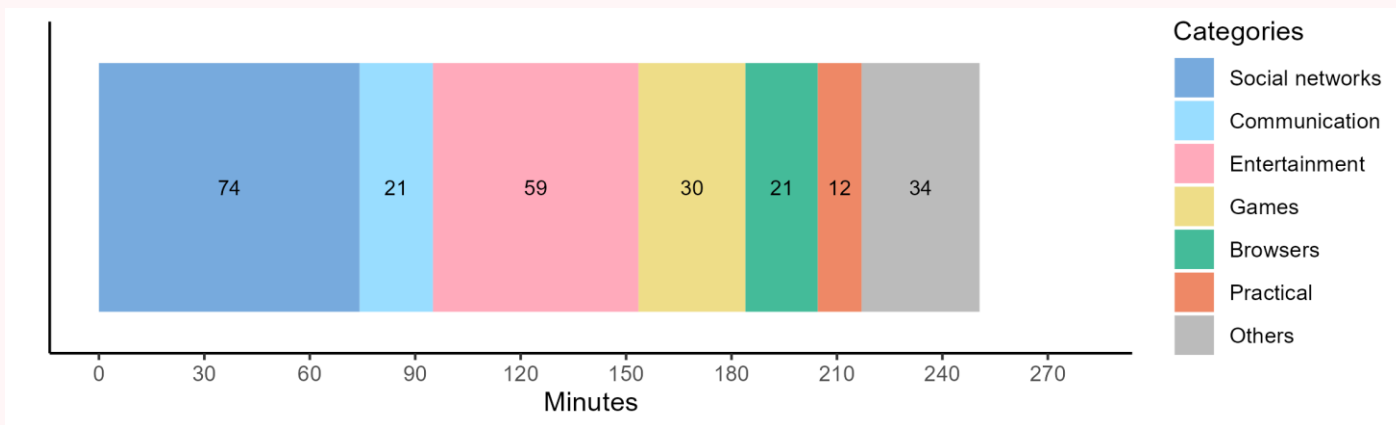
4. burst
April/May

4 surveys per day
daily objective measurement of app use
14 days, 2 weekends



RESULTS

*Comparison of the average daily time spent on the phone by adolescents
(in minutes per day)*



Adolescents spent more than 4 hours per day on their phones.

CONCLUSION

Adolescents spent **4 hours and 11 minutes** per day on their smartphones (on average)

IS IT TOO MUCH?
IS IT OK?



QUESTION 3



How much time spent on the phone daily is too much (in hours)?

IS TIME GOOD INDICATOR OF ADDICTION?

WHAT IS TOO MUCH? INCONSISTENT

- An individual can be considered as problematic users if their time exceeds a predefined usage amount
- **the time vary across studies between 4 to 8 hours per day**

TIME DOES NOT NECESSARILY INDICATE A PROBLEM

- Smartphone development
- Increased internet access via smartphone
- **They are used for a variety of activities (substitute of computer)**

QUESTION 4



What is the best indicator to determine that someone is using the phone problematically?

Phone use negatively affects individual's overall normal functioning in life

PROBLEMATIC SMARTPHONE USE

„An inability to regulate one's use of the smartphone, which eventually involves negative consequences in daily life.“

Billieux (2012), Billieux et al. (2015)

Terms used in literature:

- Smartphone addiction
- Smartphone dependence
- Nomophobia



BEHAVIORAL ADDICTIONS

- Problematic smartphone use is generally conceptualized as a behavioral addiction together with pathological gambling or compulsive shopping
- The diagnostic manuals distinguishes two categories of addictions:



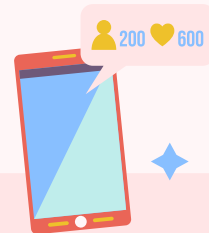
Behavioral addictions or non-substance addictions

Pathological gaming



Substance addictions

Drugs, alcohol, nicotine...



DIAGNOSTIC MANUALS



DSM

- **Diagnostic and Statistical Manual of Mental Disorders**
- Diagnostic tool published by American Psychiatric Association (APA)
- Actual versions is DSM-5

ICD

- **International Classification of Diseases**
- Diagnostic tool published by World Health Organization (WHO)
- Actual versions is ICD-11



BEHAVIORAL ADDICTIONS

- Smartphone „addiction“ or internet „addiction“ **are not officially recognized as the behavioral addictions** by these diagnostic manuals
- Only Internet Gaming Disorder was included into DSM-5 (2013) and ICD-11 (2019) as disorder requiring another research



2 groups of researchers:

- Use the term smartphone addiction
- Avoid the term smartphone addiction and even behavioral addiction and use problematic smartphone use



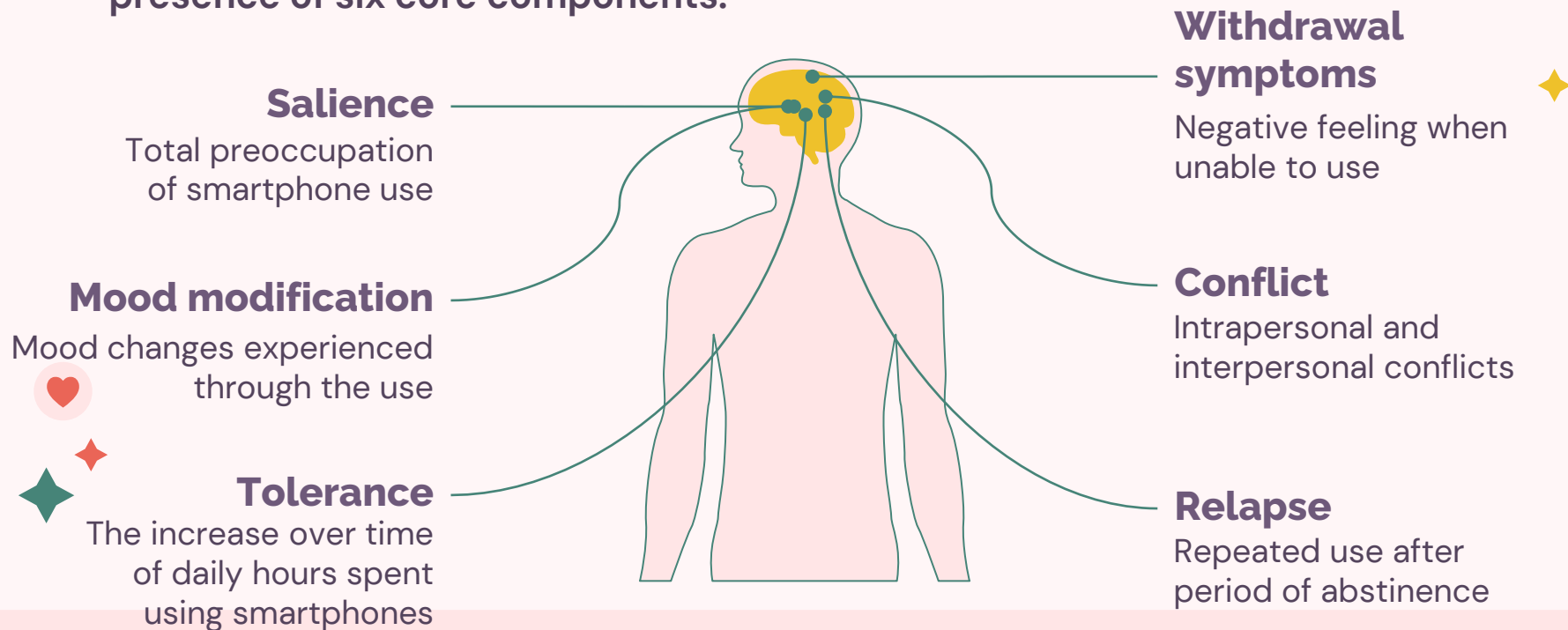
Behavioral addictions



COMPONENT MODEL OF ADDICTION

Griffiths (2005)

Behavioral addiction can be identified by the presence of six core components:



MEASUREMENT SCALE OF PSU

Csibi et al. (2021)

All symptoms have to be fulfilled to be able to say that somebody is addicted.



salience

conflict

mood
modification

tolerance

withdrawal symptoms

relapse

Smartphone Application-Based Addiction Scale (SABAS)

Please indicate the extent to which you agree or disagree with the statements below in relation to your smartphone use habits.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My smartphone is the most important thing in my life.	1	2	3	4	5	6
Conflicts have arisen between me and my family (or friends) because of my smartphone use.	1	2	3	4	5	6
Preoccupying myself with my smartphone is a way of changing my mood (I get a buzz, or I can escape or get away, if I need to).	1	2	3	4	5	6
Over time, I fiddle around more and more with my smartphone.	1	2	3	4	5	6
If I cannot use or access my smartphone when I feel like, I feel sad, moody, or irritable.	1	2	3	4	5	6
If I try to cut the time I use my smartphone, I manage to do so for a while, but then I end up using it as much or more than before.	1	2	3	4	5	6

CRITIQUE OF COMPONENT MODEL Billieux et al. (2015a)

LACK OF EVIDENCE



- Evidence supporting the identification of PSU as behavioral addiction

TOLERANCE CRITERIA

- Substance use context: higher and higher dose of drug to receive the same reward
- Smartphone use: increase in the frequency of mobile use OR still new and new devices
- **BUT** – we can use the phone more in some situation

ORIGIN OF COMPONENTS

- Components were directly transposed from those diagnosing other addictions
 - They do not consider specifics of mobile phones

PATHOLOGIZATION OF COMMON BEHAVIOR

CRITIQUE OF COMPONENT MODEL Billieux et al. (2015b)

OTHER ISSUES HIDING BEHIND „ADDICTION“ SYMPTOMS

- ✦ ○ **Case study of Thalia from assigned reading**
 - She fulfilled several smartphone „addiction“ criteria (different set) – she could be perceived as smartphone addict
 - E.g., she was not able to control her phone use, she constantly called and wrote messages to her boyfriend

- BUT** ○ **When using different approach than addiction model:**
 - Intensive use of mobile phone was result of other issues, e.g., higher impulsivity, reassurance behavior, bad coping strategies (regulation of emotions through smartphone use)

QUESTION 5



Which of the following can be connected with problematic smartphone use?

- Boredom proneness
- Poor sleep
- Poor relationships with parents
- Frequent smartphone checking
- Loneliness

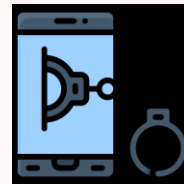
RISK FACTORS & CORRELATES OF PSU

- **Factors that are often present in people using their smartphones problematically.**

- ★ **Cause and consequence? Directionality of the relationship is often unknown**



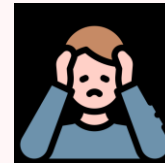
Loneliness and stress



RISK FACTORS & CORRELATES OF PSU

Sociodemographic characteristics & environmental factors

- Older adolescents & young adults
- Loneliness and stress
- Parents education
- Monthly income
- Restrictive mediation
- Poor quality of relationships with parents
- Parental neglect
- Parental addiction (substance abuse or gambling problems)



RISK FACTORS & CORRELATES OF PSU

Personality traits

- Neuroticism
- Extraversion
- Impulsivity
- Low self-esteem
- Sensation-seeking
- Emotional instability
- Insecure attachment style
- Boredom proneness

Mental health outcome

- Depression
- Anxiety
- Poor sleep

Use patterns

- Smartphone checking behavior
 - Usage short in duration and more frequent
 - Proactive use – checking for notifications or messages without any trigger

DEVICE OR CONTENT?

„Individuals are no more addicted to the internet and smartphones than alcoholics are addicted to bottles.“

Griffiths (2021)

- relative consensus that **smartphone content or more specifically smartphone applications** are the primary object of problematic smartphone use (Elhai et al., 2019; Griffiths, 2021)



TYPES OF SMARTPHONE USE/CONTENT CONNECTED WITH PSU

SOCIAL SMARTPHONE USE



- Social networking sites (Facebook, Instagram, Snapchat)
- Chatting, instant messaging (Messenger, WhatsApp, Telegram)
- Video and phone calls



PROCESS SMARTPHONE USE

- Gaming
- Watching videos, movies (YouTube, Netflix)
- Music, radio and podcasts



MOTIVES ASSOCIATED WITH PSU

Mostyn Sullivan & George (2023)

- **Systematic review of 44 studies**
- Investigating motives categories that are associated with PSU

Mood regulation motives

- to reduce negative emotions,
to maintain positive emotions

Self-identity/conformity motives

to gain approval from a social group,
to avoid social disapproval

Pass time

to avoid boredom

Social motives

to maintain relationships,
to obtain social benefits

Entertainment

Social smartphone use (social media & instant messengers)

Social motives

Self-identity/conformity motives



Process smartphone use (gaming, watching videos, movies, etc.)

Mood regulation motives

Pass time

Entertainment



02

ATTENTION ECONOMY



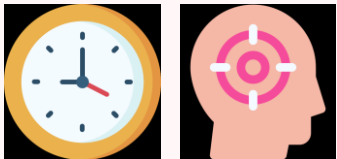
ATTENTION ECONOMY

Human attention as a commodity

Human attention is perceived as a scarce resource, a commodity or a form of capital, and therefore it is regarded as valuable.

Natural economy of cyberspace

It is a system that's all about seeking, receiving and paying the attention of other human beings (that is limited and not replaceable) (Goldhaber, 2006)



our time, our attention



money



ADDICTIVE FEATURES OF PLATFORMS

1

UNPREDICTABLE VARIABLE REWARDS

- Rewards, mainly in form of dopamine, are random, at unknow frequencies
- Rewards from usage vary



Slot machine effect

- **Slot machines work in similar way** – you never know when you'll win money and you tend to repeat the behavior that can lead you to the reward
- **Anticipation of reward** is almost as good as the reward itself at releasing dopamine



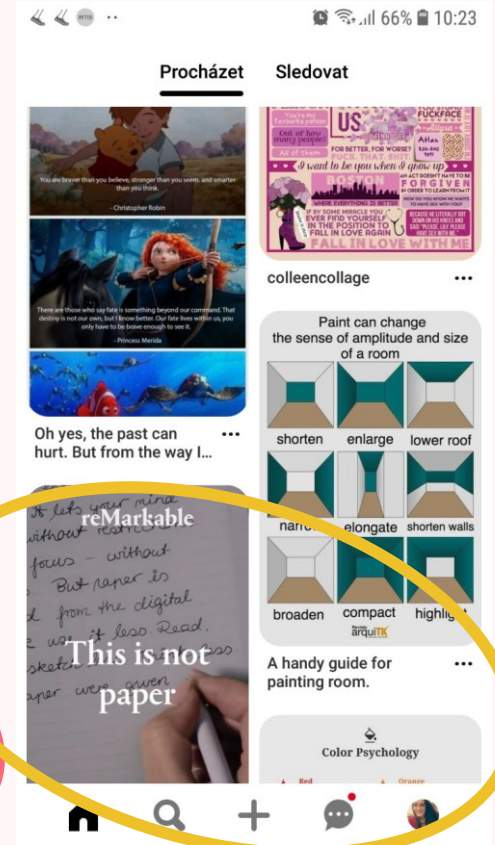
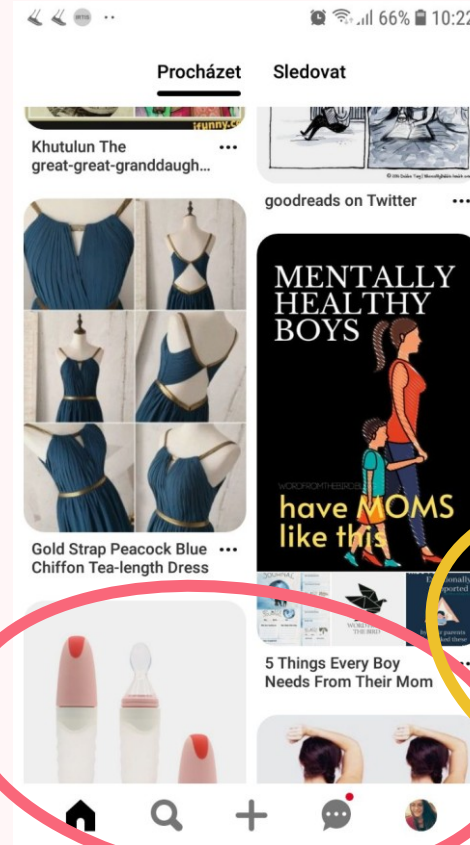
Pull-to-refresh

- Seen in a number of social media platforms
- It mimics the motion and variable reward schedule of a **slot machines**
- You never know what you'll get (**the anticipation of the reward**)



Not fully visible content

- The content is arranged zigzag, some images appear to be cut off
- To relieve their curiosity, the users have to scroll down to reveal the full picture



Pinterest

ADDICTIVE FEATURES OF PLATFORMS

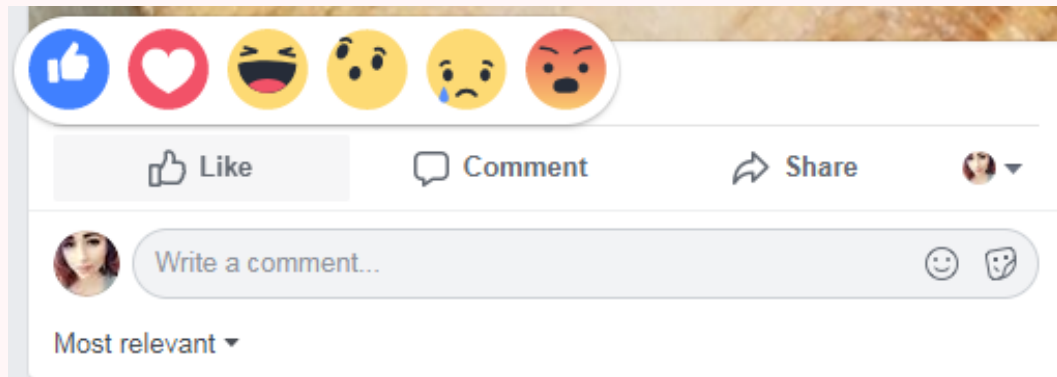


DESIRE FOR SOCIAL VALIDATION & SOCIAL RECIPROCITY

- To be in contact with others, to be validated by significant others – one of the main psychological needs
- **Craving for validation** – to be part of group, consistent with group norms
- **Reciprocal liking** – the tendency of liking those people who like us

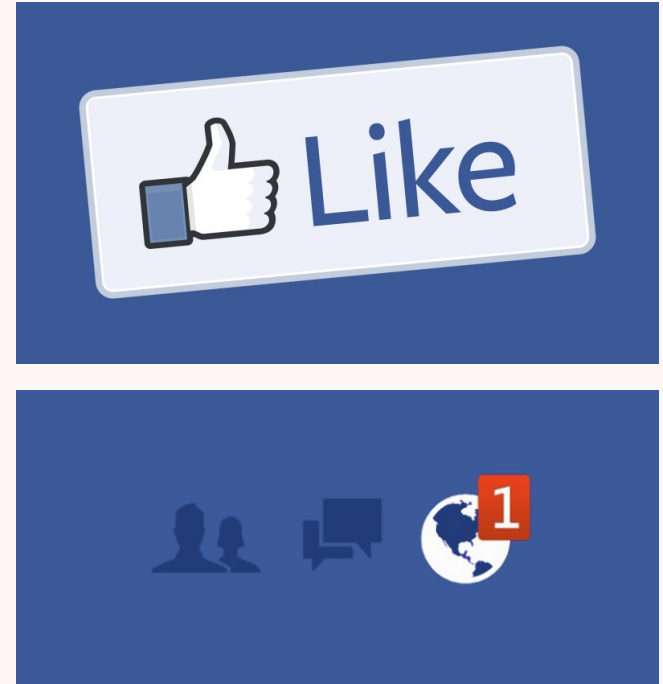
Like button, comments

- It may be the reward that user is expecting while using social media
- **Form of social validation – we belong to other, we are consistent with a group norms**



Notifications

- **Reciprocal liking** – when a user gives a Like to someone, it is then likely that the individual will also give him a Like
- Social media notify their users that these things happened – Likes, comments, shares



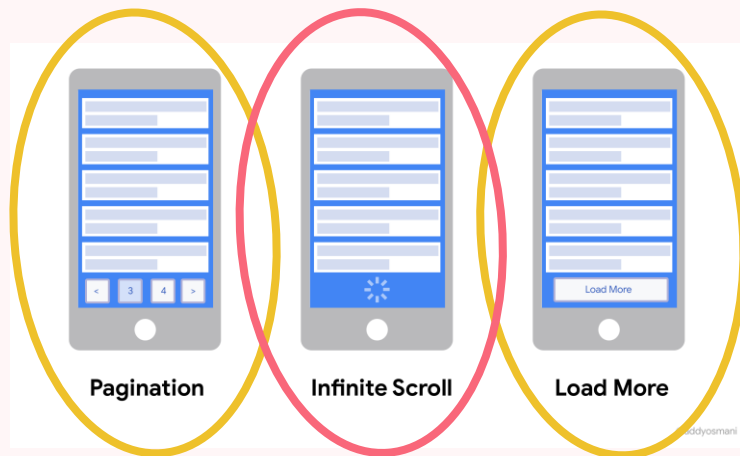
ADDICTIVE FEATURES OF PLATFORMS

3

REDUCTION OF NATURAL STOPPING CUES (EXTENSION OF TIME OF USE)

Infinite scroll

- Before that – at the end of the page, user have faced some decisions (to load the next page, to exit platform, and so on)
- **Infinite scroll removed the opportunity to make such decisions**, to reflect their behavior, to decide what to do next



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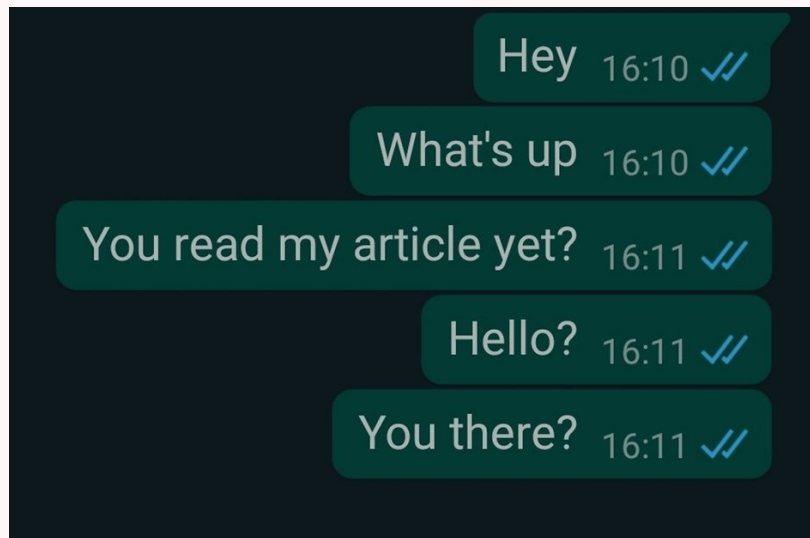
ADDICTIVE FEATURES OF PLATFORMS



SOCIAL PRESSURE

Double ticks

- Marking the read messages by coloured double ticks
- Both sides of the conversations know these rules
- **Social pressure** – if the message has been read, both sides expect a fast answer



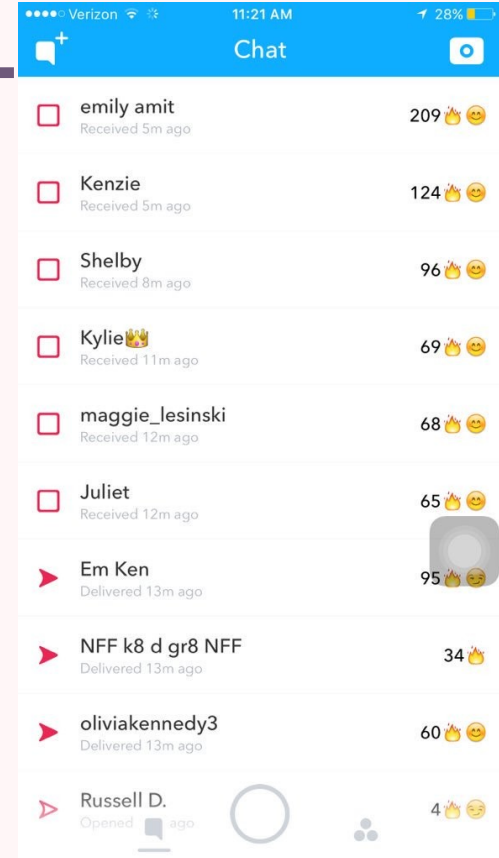
ADDICTIVE FEATURES OF PLAT



PSYCHOLOGICAL INVESTMENT

Snapstreaks

- **Sunk cost bias** – the more the individuals invest in something (time, money, effort), the more they tend to persist in the behavior
- **Snapstreaks** – the number of consecutive days that individuals have been snapping on Snapchat
- Pressure to continue with these streaks



TAKE-HOME MESSAGE

What's the most interesting thing you learned today?

What will you take away from the le



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THANKS!

DO YOU HAVE ANY QUESTIONS?

Jana Blahošová

jana.blahosova@mail.muni.cz



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