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#IMMUNE Train-The-Trainers

The Social Media Business Model: Personalization and the Engagement Rate

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1. Introduction

In the last module we learned how data about each internet or social media user is collected. In this module we go one step further and address the question why these data are collected and what online marketer and the online platform operators do with all these data. A long story short, the central aim of the all of this data-collection effort is to infer the internet users' interests as precisely as possible and subsequently provide them with tailor-made advertisement that is fitting neatly their interests and demands. This is called personalised marketing and is by and in itself neither a particularly new phenomenon nor is it generally regarded problematic. The magnitude, however, that personalisation is applied by online marketers has, indeed, assumed alarming dimensions.

This is because of the fact that personalised marketing becomes more effective the more data and hence information is available about the internet user. The more the internet marketers know about the users the better do the suggested ads fit their needs and demands, the higher is the probability of a reaction, e.g. a purchasing decision. Accordingly, the online marketers are eager to maximise the internet users' engagement rate which measures the extent that the internet user engages with the presented content in a meaningful way, e.g. reading a text, viewing a picture, watching a video, listening to an audiofile, commenting, liking, or sharing it. More engagement means more attention for the content, more time spent with the content, more time and space for the marketer to show ads. More engagement with the content means also an even thicker data trail left by the user and more information about personal interests and connections with other people. In the end, this means that not only the ads are personalised – the entire content on a social media feed and on certain other platforms is.[1]

But, personalisation goes even one step further. In order to increase the effectiveness of personalised marketing online marketers started to research the best moments during an interaction for a specific ad to be shown. They analyse when the internet users are particularly vulnerable for a specific advertising message in order to confront them with it in the right moment – a moment when the internet users have the highest probability to fall for the message of the ad.

This module is going to explain the mechanisms behind the two terms *personalisation* and *engagement rate.* It is going to show which psychological traits of each internet user is exploited to maximise the engagement rate and improve the personalisation of advertisement.

[1] As Siva Vaidhyanathan describes it for the social media platform Facebook: "On Facebook everything is an advertisement and advertisement is everything." [1]

2. Identification, Segmentation, Personalisation – How Collected Data Are Processed

What happens with all these data once they are collected? They migrate into large, highly segmented data profiles of individual internet users and allow advertisers target the individuals that are behind the profiles by tailor-made advertisement.

2.1. Identification

So first, the internet users are identified based on the numerous information that they either disclose voluntarily or that is derived by cookies or other identification methodologies that are dealt with in the previous module. The process is a little bit like this: Imagine you visit the social media site *Instagram* in order to view pictures of one of your friends. If you have an account on *Instagram* that you log in you are immediately identified by the information that you have disclosed when becoming a member of the social media platform and by agreeing with its terms and conditions including the data privacy regulations. If you do not log in to the site because for example you have no *Instagram* account but you have enabled cookies, *Instagram* will nevertheless recognise you by the data that are stored in the cookie jar of your browser. But even if you actively disable cookies you might be identifiable by, for example, your browser settings in combination with the information that *Instagram* has about you through your friend who has an account. So, in essence, *Instagram* is most probably able to identify all visitors of its website regardless of the fact that they have an account or not.

2.2. Segmentation

Identification of the internet user means that *Instagram* is now able to link the activity of this specific internet user to a user profile that the social media platform has created from all the previous data that is had collected before. Every new data point that can so be linked to the profile is entering the profile and is complementing it. The data in the profile are grouped in variables that characterise the internet user. The profiles of all identified internet users are compiled in one large data set that is subsequently segmented.

The overall aim of the data-collection effort is to derive useful information from them. Data segmentation contributes to this aim by dividing the data in smaller and preferably more homogenous subsets of the data that display a certain commonality. In other words, the data profiles are split into different variables in order to make the profiles comparable. The segmentation allows the platform operators to see which internet users have similar characteristics and are therefore the ideal targets for certain advertisers. Segmentation of the data is entirely based on heuristics and are completely free of any kind of theory. So, why certain profiles display these commonalities is not known and is not

interesting for *Instagram* per se. Important is the fact that they have the commonality are therefore a useful target for a specific kind of advertisement.

2.3. Personalised Marketing

By identifying the internet users and creating a profile of their internet usage companies like *Meta* that is operating social media platforms like *Instagram* are able to provide the internet users with personalized information – preferably personalized advertisement. Personlalizing advertising means that internet user are presented only ads that supposedly fit to their interests and thereby promise to be more effective. More effective means having a higher probability to trigger a purchasing decision. There are principally three pathways for personalizing information and advertising.

1. First, a social media site knows what the site users like to do by tracking their behaviour on the site (and possibly outside through cookies). They know which articles the users read, which videos they watch, which advertisement they click on , etc. If I click on a link to a Basketball game that was sent to me from one of my friends, the social media site knows that I am interested in Basketball and infers that I might also be interested in Basketball related sportswear. This is highly valuable information for companies that are affiliated to Basketball – for example NBA merchandisers or the sportswear company *Nike* that is just about to release the newest *Air Jordan* collection.[2] They are probably ready to pay the social media platform a considerable fee to have their ad about the new *Air Jordan* collection spread among Basketball affiliated people. The social media platform can easily reach them.
2. Second, many companies know from their market research that their products and services are popular among people with certain attributes. Advertisement for certain pharmaceutical products are interesting for certain age groups for example. The social media platform can easily reach these people through its entire advertisement ecosystem. This is highly valuable for companies who want to get the knowledge across about their newest medical preparation and are possibly ready to pay a considerable fee for this service.
3. Third, social media sites are supposedly very efficient to identify new target groups for goods and services by creating so-called *"lookalike audiences".* This means that the social media site knows rather well what people do and want that are similar to yourself in important aspects. This is also highly valuable information for companies that want to advertise their products and services because one can assume that similar people have similar interests and may react to the same stimuli. If I share important characteristics with people that are highly interested in buying an electric car, there is a high probability that I will also be interested in purchasing a similar car. Then, the electrical car company may be interested to pay a fee to get their messages out to myself.

[2] The Air Jordan Basketball shoes are popular among Basketball players.

Personalization of advertising is not regarded problematic per se. It has always been the aim of advertising companies to increase the effectiveness of their ads in terms of reaching those people only that are potentially receptive for the ad's content without bothering others. And indeed, according to a review by the *Forbes Magazine* consumers do appreciate personalized advertisement.

- 71% of consumers feel frustrated when a shopping experience is impersonal.
- 91% of consumers say they are more likely to shop with brands that provide offers and recommendations that are relevant to them.
- 42% of consumers are annoyed when content isn't personalized.
- 80% of companies report seeing an uplift since implementing personalization.
- Personalization can reduce customer acquisition costs by up to 50%.
- 55% of marketers say the top benefit of personalization is increased visitor engagement and improved customer experience.[3]

However, platform operators have taken personalization to a debatable level. This is because they have not only personalized their advertisement but also the entire content that their users are confronted with. This shall maximize users' *Engagement Rate* and allow for even more targeted and personalized advertisement leading to more sales for the advertisers and profit for the platform operators.

[3] These are all examples from the Forbes 2020 article: „50 Stats Showing the Power of Personalisation" by Blake Morgan. https://www.forbes.com/sites/blakemorgan/2020/02/18/50-stats-showing-the-power-of-personalization/ accessed on August 31st 2023.

3. The Engagement-Rate

The core aim of internet marketers like social medial platforms is to confront their users with as much advertisement as possible that is fitting their interests as neatly as possible. Therefore, they are eager to keep the users as long as possible on their site and involve them in any form of interaction like viewing, reading, sharing, or commenting content that is presented to them. The more time the users spend on the platform the more time the marketers have to present them ads. The more users interact with the platform the more data the platform operators obtain from the users and the more accurate the personalized advertisement that can be placed. The measure that is capturing the interaction of the user with the platform is the so-called *Engagement Rate*.

Info-Box: The Popularity of Social Media

Apparently, people seem to like social media. This explains, in part, their massive economic success. One theoretical model that is explaining its popularity is the *"Hedonistic-Social-Utilitaristic Gratification Model"* (HSU-Model). Accordingly, humans long for activities that are fun (*hedonistic*), have a social element and (re-) confirm our belonging to a social community (*social*), and promise an added value beyond the former two factors (*utilitaristic*). Each joyful activity or interaction with our friends and family activates our physiological reward system (*gratification*) in our brain. This makes us feel well and energized. By activating the reward system our brain learns which activities are good for us and makes us strive for more of this activity and the related positive feelings.

The physiological reward system is steered by the *Dopamine-Cycle*. The joyful activities make the level of the hormone *Dopamine* increase which is importantly responsible for our positive feelings. Our body reacts to the dopamine driven overstimulation by reducing the dopamine production in order to end it and bring our mood back to "normal".

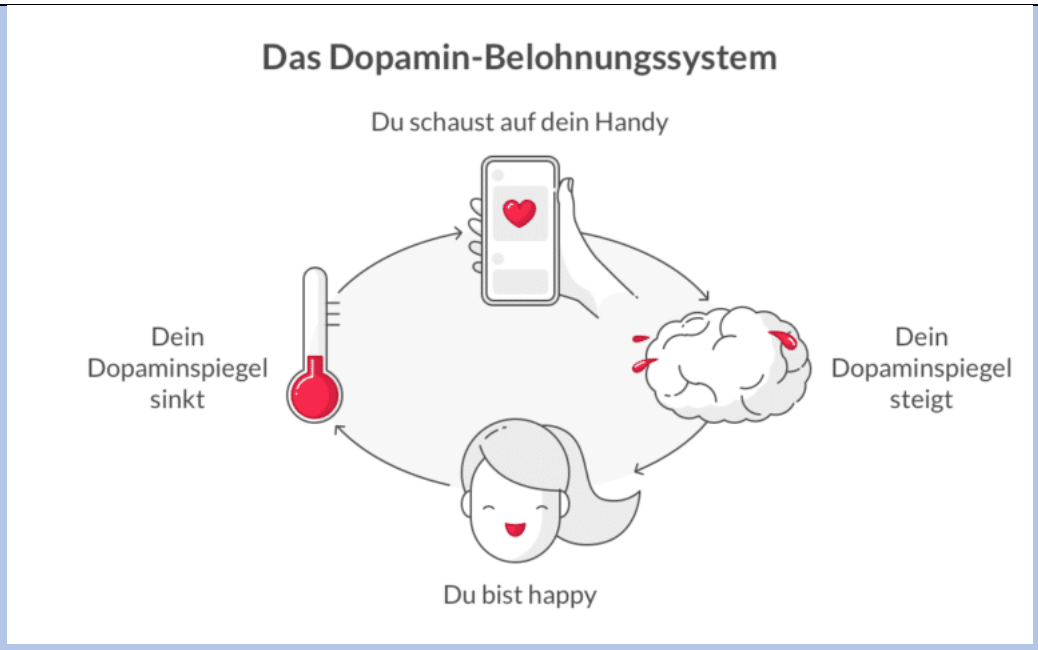

Figure 1: The Dopamine Cycle

The Dopamine-Cycle is usually balanced which means that our dopamine level is neither too high nor too low – along with our mood that is neither too good nor too bad. The Dopamine-Cycle can, however, bounce out of balance if it is constantly overstimulated. This may happen if we immediately give in to our longing and permanently engage in the stimulating activity. Then, we run the risk to reach a point in which we need the stimulation just for having a *"normal"* dopamine level and a "normal" mood. The reason for this effect is that each reduction of our dopamine production leads to a short dopamine undersupply in our body which negatively affects our mood. Usually, this will pass quickly with us hardly noticing. But, if we immediately react and make our dopamine level increase – for example because we engage in the joyful activity again – our dopamine level rises again. But, it might not reach previous levels - our stimulation might not be as distinct as before. But as we want that stimulation so badly we might engage even more extensively in that activity which is the first step out of the balance. We might end up in a state in which we need the stimulation just to feel "normal".

This dopamine cycle is often described to play an important role in the development of addictions of all sorts including internet and mobile phone addiction. According to [2] this relation is indeed plausible. We know, for example that persons with a lower dopamine synthesis capacity use social media applications more often in order to get a dopamine-kick at all. However, one has to recognise also that the direct empirical evidence for a causal relation is still lacking. Apparently, the relation between the dopamine cycle and addictions is indeed more complex.

It is, however, also plausible that digital applications and social media easily upset our dopamine-level as described above because they are always available – through mobile phones – and are so easy to use. This makes them the perfect remedy for countering the short dopamine deficiency immediately and a danger to our balanced dopamine level.

There are several tricks that are applied by the platform operators to maximize the *Engagement Rate*. They all "play" with psychological traits of us humans in order to capture our attention and keep us busy on their social media platform. This section will describe three important ones in the following: social interaction, the persuasive design of the platforms themselves, and the limitless supply of personalized information to the users.

3.1. Social Interaction

Humans are herd animals. It is extremely important for us to belong to a community and to be part of a social entity whatsoever. Accordingly, whether we acknowledge this or not, it is important for us to know what other people – more specifically – our community think of us. We reassure ourselves of our belonging to our community by their feedback whatever this feedback might be. One basic line of argumentation ties this fact back to our evolutionary past in which our chances of survival depended crucially on our community – something that, one could say, has principally not changed. Therefore, one could argue that the core feature of social media, namely the ability to present oneself and to communicate, to join groups and to receive information about others is satisfying our desire for belonging and is supposedly the major reason for the high popularity of social media platforms.

However, the social element can also come with a log of stress to its users. Their longing for social recognition makes them invest plenty of time and effort in maintaining their social media profiles and communicating with their network. Therewith, users want to produce a best possible image of themselves and improve their standing for example. Positive feedback does indeed have a positive impact on our mood and self-esteem [3]. To the contrary, negative feedback or simply a lack of feedback to our postings make us nervous. So, social media activity is not only joyful and relaxing but also marked by stress and tension.

One theoretically well explained and empirically confirmed phenomenon is the *Fear of Missing Out* (*FoMo*). [4] It describes the individual's fear to miss out on important events or information that are taking place in their network. This fear is making social media users spend enormous amounts of time on the platforms and engaging in enormous amounts of interaction. This fear impacts the users even when they are not busy with their social media profile. A part of their mental capacity is used up for worrying whether they are being left out of something. Tragically, considering the size of most social

networks there is always something happening and the users constantly miss out on something. So, their fear is repeatedly confirmed because they realise that this something has indeed taken place without them being present.

This is strategically exploited by social media platforms that are now and then presenting content that is intended to trigger the users's *FoMo*. This might be hints about bilateral communications of some other friends or discussions about certain events that are about to take place. It is also used in form of nudges like for example messages suggesting the user to contact certain members of the network or to add new persons to the network.

Another very important hook that keeps us on social media platforms in particular on the long term is the so-called *Endowment Effect*. According to that users of social media platforms appreciate the time and effort that they have invested into building up and maintaining their network so highly that they do not dare to abandon it ([2], p. 83). The *Network Effect* complements this argument. It describes how difficult it is to leave a social media platform because the users risk of leaving their network that they have built up over the past and subsequently loose contact to deer people. The greater and well maintained the network is maintained the harder is it also to shift to another one because it is hardly possible to convince the whole network to follow. Network Effects also explain why social media platform operators grew so quickly and are so persistent since they have established themselves. As Jamie Bartlett writes: " If you joint Facebook, your friends will be more likely to join, too, which in turn makes their friends more likely to join. When everything is connected, such network effects can spread further, and far more quickly. It is such a powerful force that the biggest problem faced by Facebook today is that it's running out of humans to connect" ([5], p. 79).

3.2. Persuasive Design

If users log in to a social media platform they are confronted with a carefully developed design that establishes immediate contact with them. There are plenty of functionalities to adjust, plenty of actions to perform and buttons to klick on. And every time the users perform an action they receive a visual and/or and audio feedback – preferably designed with signalling colours that attract our attention. Good examples for communicating designs are online games that are very popular on social media platforms as well. There is permanently something exploding, blinking, shining, flying or falling as a direct response to our activity. Each and every one of these small happenings trigger our dopamine-driven reward system, especially if they are appealingly designed. Game developers call this visual layer the *"Juice"* [6]. The *Juice* is basically not necessary for the functionality of the application, platform or game, respectively. It is only there to be more fun.

Another aspect of the persuasive design is the so-called "*Nudging*". One speaks of *nudging* if the technical system confronts the users with little indications about something or requests them to do something. The prime example for *nudging* is the display of checkmarks in most messenger applications. They show whether or not someone has received and read a message. This simple sign has an important effect on our communication through messenger services. The information that the addressee of the message has received and/or read the message raises the expectation of the sender that the addressee should reply as quickly as possible. Knowing that the sender knows that the addressee has received and read the message pressurises the addressee as well to reply to the message as quickly as possible. In general, the checkmarks lead to a quicker and more immediate communication – but also to more stress ([2], p. 78). Another example for *nudging* is a red-highlighted information sign asking the user to take a look at something. This might be the latest developments on the social media platform or simply the newest publications on a streaming portal. In principle, nudges work because they pressurise the users to do something by creating stress and tension.

In sum, nothing in the visual design of a social media platform or technical platform, respectively is left to chance. The looks and the functionality of every surface is empirically tested with extensive A/B-Testing and optimized towards the biggest impact on the users' engagement rate.

3.3. Limitless supply of information

A very important element of each social media platform is the limitless supply of new information. Social media platforms like *Facebook* or *Instagram* have their central news feeds that permanently present the users new pieces of information. Video streaming portals like *Youtube* have their autoplay functions which automatically plays the next video as soon as the previous one has ended. With every new piece of information the users' attention is captured anew which keeps their interest intact. The presented content is, however, not randomly selected. There are some conditions that need to be met in order to keep users interest and Engagement Rate high.

3.3.1. Personalised Content

The content should be of interest to the user. Therefore, it is highly personalised which means that each and every piece of content on a social media platform and many other technological platforms is carefully curated in order to maximise the users' Engagement Rate. Just as in the case of personalised advertising, social media platforms track the activity of their users by various methodologies to infer their real interest, needs and demands and suggest them the corresponding content. So, in fact the platform operators play with our natural interest to discover something new that is relevant for our life. Every time we see something new and related in our newsfeed, our dopamine driven reward system is triggered and we feel some sort of satisfaction.

3.3.2. Development and progress

The content has to entail some sort of development or progress. This means that users are constantly supplied with new facts and varieties of their interest. Accordingly, every new content needs to be more drastic or extreme. This makes us continue watching or interacting in the joyful expectation to see ever nicer content.

3.3.3. Cliffhangers

Platform designers work with cliffhangers (and *nudges*) to keep our interest high. Cliffhangers are best known from episodes of TV series that end with a surprise or an open question and the hint that this will be resolved in the following episode. Psychologically, cliffhangers produce tension with the users which needs to be resolved – by watching the next episode. They can, however, also be placed in other social media sites e.g. by strategically posting the headline of a related article after the users have completed reading a text or watching a video.

3.3.4. Emotionality and Negativity Bias

A strategy to keep users' interest high is to confront them with emotional content. It is known from studies in media psychology that media of all sorts are well able to induce feeling in the viewers, readers, or listeners. This refers to all sorts of media – entertainment shows, news, political campaigns, advertisement, music or computer games. The feelings that might be induced are (discrete) emotions like anxiety, anger, rage, disgust, enthusiasm, pride, contempt, grief, happiness and surprise [7].
It is also known that people tend to react more easily to emotional content. This idea goes back to the wok of Daniel Kahnemann and Amos Tversky "who pioneered the study of how me take decisions – and especially irrational ones" [5, p. 35]. Their main point was that there are two basic systems that govern human behaviour. 'System one' thinking is fast, instinctive and emotional. It's the reptilian brain running on instinct. By contrast, 'system two' thinking is slow, deliberative and more logical. It sometimes, but not always, acts as a check on those wilder rages" [5, p. 35]. The internet, as Jamie Bartlett writes "closely resembles 'system one': everyone and everything is immediate, instinctive and emotional" [5, p. 35]. Therefore, "the internet is primarily an emotional medium, which is something that many technologists fail to grasp. Speed and emotion are related, of course, because both are means by which our finite brain handles information overload and total connectivity. It is obviously true that citizens need information to form opinions and make judgements, and there are many benefits to a more democratic form of media. But the modern citizen is expected to sift through an insane torrent of competing facts, networks, friend requests, claims, blogs, data, propaganda, misinformation, investigative journalism, charts, different charts, commentary and reportage. This is confusing and stressful, and so we lean on easy and simple emotional heuristics to make sense of the noise" [5, p. 35]. "…because there is so much noise out there, studies repeatedly find that emotional content is more

likely to get traction online shares, retweets, etc. – than serious and thoughtful comment and stories" [5, p. 35]. And on top of it all, it is not entirely accidental to which emotional content we react to. It seems to be the case that media users tend to rate negative information more highly than positive ones - a phenomenon that is also known as "Negativity Bias" [8]. A more recent publication on the distribution of Fake News shows that content displaying anger and rage is shared significantly more often [2, p. 212].

In sum, the endless supply of personalised content that is generating an increasing amount of attention by new and (apparently) more relevant information are able to create an immersive user experience in which the user is losing touch with time and space and plunges entirely into the content on the screen. This is also called an immersive user-experience or a flow-experience that is typical for social media platforms and other online spaces like online games or video portals. Due to the fact that our brain is reacting rather to content that is marked by negative emotions, so for example content that is dealing with conflicts, anger and rage, this entire flow-experience might have a negative touch leaving us excited, annoyed, and agitated – at least in a standard social media setting.

The bottom line of all this is: by maximizing the Engagement Rate social media platforms are inducing negative emotionality and make their users angry at each other. Even if this is not done on purpose – so with the intention to make people angry at each other. It is nevertheless the result of automated, algorithmic curation of online content that is maximizing the users' Engagement Rate because the recommender algorithms choose the content that promises the highest probability to provoke a reaction by the users. Empirically, this is, in fact, content displaying negative emotions – tension, aggression, or conflict. This is problematic per se because users get agitated. From a democratic point of view this has disastrous consequences or the users' willingness and capacity to communicate across political or societal groups or camps.

4. Bibliography

[1] Vaidhyanthan, S. (2018): *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy.* New York: Oxford University Press; p. 82.

[2] Montag, Christian (2021): Du Gehörst Uns! Die psychologischen Strategien von Facebook, TikTok, Snapchat&Co – und wie wir uns vor der großen Manipulation schützen. Münschen: Christian Montag und Karl Blessing Verlag.

[3] McMahon, Ciarán (2019): The psychology of social media. London New York: Routledge

[4] Przybylski, A..K, et al. (2013): Motivational, emotional, and behavioural correlates of fear of missing out. Computers in Human Behaviour 29(4), S. 1841 – 1848

[5] Bartlett, Jamie (2019): The People vs. Tech. London: Penguin Randomhouse

[6] Alter, Adam (2019): Unwiderstehlich. Der Aufstieg suchterzeugender Technologien und das Geschäft mit unserer Abhängigkeit. München: Piper.

[7] Wirth, W. (2013): Grundlagen emotionaler Medienwirkungen. In: Schweiger, W. and Fahr, A. (2013) (eds.): Handbuch Medienwirkungsforschung. Wiesbaden, Springer VS; p. 227 – 346

[8] Peter, C. & Brosius, H-B. (2013): Wahrnehmungsphänomene. In: Schweiger, W. and Fahr, A. (2013) (eds.): Handbuch Medienwirkungsforschung. Wiesbaden, Springer VS; p. 463 - 480