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DIGITALISATION AND COMMUNICATION: SOCIETAL TRENDS AND THE CHANGE IN ORGANISATIONS

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DIGITALISATION AND COMMUNICATION: SOCIETAL TRENDS AND THE CHANGE IN ORGANISATIONS— PREFACE

CHRISTIAN REUTER, TANJEV SCHULTZ, CHRISTIAN STEGBAUER

The digitalisation of communication started as early as the 1980s. With the rise of the internet in the mid-90s the digitalisation process intensified; then it took on another dimension with the spread of social media and smartphones in the mid noughties. These new technologies are providing new possibilities that are unveiling, or rather, strengthening societal trends. What's more, traditional forms of organisation are also being transformed at breakneck speed. This publication provides an overview of both developments: On the one hand we have societal developments such as the blurring of boundaries between real and digital worlds, constant connectivity, fake news, and social media outrage. On the other, we have the effects on traditional media, the workplace, schools, non-governmental organisations and sports.

Inspiration for this publication came from the Mercator Science-Policy Fellowship-Programme. This programme facilitates exchanges between its Fellows, who are executives "from the field", and academic staff and researchers at the universities of Darmstadt, Frankfurt and Mainz. Mercator Fellows have shown a strong interest in the topics of communications, media and digitalisation, and their impact on policy, society and economy. This publication aims to provide an overview of this dynamic subject area. The different contributions offer perspectives from a variety of academic disciplines. Mercator Fellows have also contributed articles which throw light on how digitalisation is changing their organisations.

Our gratitude goes out to the Mercator Foundation (Stiftung Mercator) for its support for this fellowship programme and publications such as these.
We hope you enjoy the read!

DIGITAL WORLD AND REAL WORLD – OPPOSITES NO MORE

DANIEL LAMBACH

PD Dr. Daniel Lambach is a Heisenberg fellow at Goethe University Frankfurt and a senior associate fellow at the Institute for Development and Peace at the University of Duisburg-Essen. His research focuses on the construction of territory in unregulated space. His article "The Territorialization of Cyberspace" was published in the International Studies Review in 2019.

From the beginning, the internet has been spoken about as a distant place. In 2013 Germany's Chancellor Angela Merkel described it as Neuland ("undiscovered country") that was to be explored. Legal and domestic experts and policy makers like to warn the public of the "Wild West" in this ungovernable realm that exists in a "legal vacuum". Libertarian internet visionary John Perry Barlow even declared the internet's independence in 1996. Such statements are founded in the understanding of the internet as an entity of its own that is only loosely connected with the "offline world". This depiction of the internet is however quickly becoming ever more removed from the reality of the situation – if ever it was accurate. Instead, we can observe how the "digital" and the "real" world converge and infiltrate one another.

The infiltration occurs in both directions: the digital world penetrates the physical world via smartphones, optical displays, the Internet of Things and ever smaller, ever more everyday items. On the other side, the physical world penetrates the digital through techniques such as geolocation which are increasingly changing the internet's character. Geolocation is a means to establish a user's location and digitally process it. IP addresses, GPS data, transmission towers, wireless access or Bluetooth connections are all avenues via which extremely precise location information is generated – even within buildings. Anyone who has, after visiting a store, been asked to review it on Google Maps, has been the target of such technology. Geolocation can also be used for so-called "geo-blocking" when access to data and content is regulated according to one's location. Geolocation has therefore become an important tool to differentiate the marketing of intellectual property between different territories or to implement national statutes (regarding public speech, for example) via the internet.

Thus, the boundaries between the digital and the physical world are eroded,

with ambiguous results. On the one hand, it is possible to more effectively execute laws, such as when, for example, the German version of a website can be adapted to comply with German law for internet users in Germany. Economic and societal benefits include easier access to different communication channels and information sources. On the other hand, there are also dangers. For example, the potential the internet holds from being borderless can be threatened by overlaying the territorial logic of the offline world over the online world. What's more, geolocation techniques generate incredibly large, person-specific datasets which are, to this day, not sufficiently protected. In brief: we should say goodbye to the mode of thought that identifies the digital realm as separate from the "real" world. Online activities and data access will become ever more engrained in our daily social life.

The consequences will be wide-ranging for society and policy, and many of these are already playing out today. They include the removal of the boundaries between public and private spheres, between work and leisure, and the unification of online and offline identities. The adage "on the internet nobody knows you're a dog" no longer applies. States must change their classic territorially bound governing instruments to include de-territorialised ones. For example, the last few decades have seen the introduction of value-added taxes for internet trade, the sanctioning of forbidden expressions of opinion (such as holocaust denial), and debates about how to assure data protection – all without limiting the dynamics and the potential of the internet through an all-encompassing control and surveillance mechanism.

The German government has already taken action, for example, with the creation of pertinent laws ranging from specialised prosecutorial offices for internet crimes and the ability of the police to carry-out internet operations, to the establishment of the German military's Command of Cyberspace and Information Space (CIR). At the latter laws' inception, the internet was still considered to be a separate space, however this need not stand in the way of integrated action. Internet crimes are often connected with illegal actions in the physical world, and the defence against cyberattacks cannot be separated from other forms of national security.

The creation of these capacities was an indispensable step, yet how such laws and judgements are to be enforced has not yet been satisfactorily resolved. For example, how are judgements to be enforced when they are made against the users of a major internet platform such as Facebook, or perhaps even against the entire company itself? These platforms are subject to national

laws. However, the multitude of participants, or rather affected nations, can stand in the way of these laws' enforcement because of the cross-jurisdictional differences in the political and legal assessments of the crimes.

Such circumstances quickly create the impression that a national government is unable to act in the face of the new borderless realities of the digital-real world. However, this is misleading. Though traditional tactics may fail, governments still have the capacity to be creative and find new avenues of action. In fact, national governments have a multitude of options, as they can access all components that constitute digitalisation. They can regulate the technical infrastructure of cables, servers and transmission towers, for example through legal standards or access for surveillance reasons. The regulation of codes and algorithms also presents an opportunity for control. This is currently being heavily discussed in the context of Artificial Intelligence, "smart cities", and autonomous vehicles. National governments are also increasingly attempting to gain control over data by passing laws on data localisation and protection that limit the transfer and use of data. Finally, liability rules can be used to control users.

If hierarchical means such as the enforcement of laws and police powers are ineffective, national governments resort to other means. One avenue is to use their power over intermediaries that are responsible for the execution of a judicial decision. In relation to the internet, these intermediaries are more often than not large companies that are obliged to comply with court rulings by, for example, deleting justiciable comments on social media or by fighting software piracy. Another avenue is for a government to participate more in internet governance by engaging with companies, civil society organisations and experts on established rule-creating and standard-setting fora.

The final consequence of the melding of digital and real worlds concerns not only the breaking down of borders within the social spheres of societies, but also those borders between societies. Once an inseparable part of the territorial nation-state, territory is thus loosening its ties to the state a little more. Space is becoming more dynamic, movable and adaptable. We therefore have the capacity to spread our influence far beyond the borders of our currently conceived national territory. This is why the European Union's General Data Protection Regulation is followed almost world-wide. Such functional regulatory spaces reach far beyond national territories, and national governments may even be broadening their ability to exercise control.

There is a great need for such effective governance today. Many citizens feel

they are losing control due to globalisation, the dissolution of boundaries and digitalisation. Public and political discourses are marked by fears of loss and of what the future holds. It would be timely for governments to step in as the shapers of the new "digital-real world", to legitimise and uphold democracy, and to show their citizens that they do not have to fend for themselves when faced with anonymous forces in this complex new world.

There is an urgent need for further action in data protection, for example. Firstly, international cooperation in this field is still underdeveloped due to the pronounced divergence of laws in different countries. Secondly, many internet companies live off the monetisation of user data: "If you are not paying for the product, you are the product". Thirdly, more and more personal data is being accumulated and can be combined and evaluated using big data processes. Therefore, tougher rules concerning geolocation data must be developed. A ZEIT article showed how detailed personal activity profiles could be in 2009 (https://www.zeit.de/datenschutz/malte-spitz-vorratsdaten). Journalists had combined the data on Green politician Malte Spitz's movements, collected by his Telekom mobile phone, with other freely accessible data. One can imagine how this ten-year-old profile would be much more detailed today without the interference of appropriate regulation that has been implemented since that time.

BRAVE NEW SMARTPHONE WORLD? PSYCHOLOGICAL WELLBEING BETWEEN DIGITAL AUTONOMY AND CONSTANT CONNECTEDNESS

LEONARD REINECKE

Leonard Reinecke is professor at the Department of Communication at Johannes Gutenberg University Mainz. His current work addresses the uses and effects of interactive and non-interactive media, computer-mediated communication, and entertainment research.

The last decade has seen the fast-paced advance of digitalisation, resulting in significant changes in the communication and media use patterns of German citizens. As a result of the "web 2.0 revolution", internet users evolved from their mostly passive role of consumers into active producers of user-generated content. Concurrently, the second most impactful change to internet use has been the growing spread of mobile devices and internet connections. Indeed, a growing proportion of especially the younger generations has undeniably developed an "always on" lifestyle. As the most important access point to the internet, the smartphone has long since overtaken the stationary PC (Medienpädagogischer Forschungsverbund Südwest, 2018). What's more, mobile users already make up a total of 71 per cent of the total population, and the majority of 14 to 29 year-olds use the mobile web on a daily basis (Frees and Koch, 2018).

These numbers demonstrate that a fast-growing proportion of users is at least potentially "POPC", that is, "Permanently Online and Permanently Connected" (Vorderer et al., 2018). These users are constantly supplied with online communication, information and entertainment options: WhatsApp, Instagram and YouTube have established themselves as constant companions to the younger generations of users and provide an almost continuous connection to virtual social circles and world affairs. Figuratively speaking, the smartphone has become a social tether connecting users with their peers and a digital pocketknife that can fulfil its owner's needs and desires instantaneously at any time.

As such, the use of mobile technology has become routine: from reaching for the smartphone being the first action after waking, via numerous phone-checking episodes throughout the day – often lasting only seconds, to a last look at the smartphone before bedtime when the phone is placed within

reach on the nightstand. Aside from such "always on" modes of behaviour, many users have also developed a "POPC" mindset, that is, an almost constant mental orientation towards and alignment with online activities. The concept of "online vigilance" (Reinecke et al., 2018) is the perfect descriptor of such states: the smartphone reliably provides instant satisfaction of needs, and the experience of successes and rewards, which activate psychological learning processes. Users develop chronic alertness to "connection cues", prompts that emanate from mobile devices in the form of acoustic signals and other notifications, alerting the user to the potential to satisfy their need for information, interaction or entertainment.

Cognitive and motivational predispositions are formed through the strong reward mechanims associated with the use of smartphones. Mental preoccupation with the online world increases, even if the internet is not being used at the time: What is happening online and in my social networks? Am I missing important events or interactions? The consequence is that the smartphone is checked for incoming notifications very frequently, messages are reacted to within seconds, and the opportunity to interact online often takes priority over any simultaneously running offline activities.

Always on: opportunities and risks for psychological well-being and mental health

The digitalisation and mobilisation of communication and media use has not only impacted on users' behaviour but also on users' thought processes and experiences. What is the consequence for quality of life of an "always on" society? From a psychological perspective there are both opportunities and risks (for an overview see Reinecke, 2018). The potential for positive impact of a POPC lifestyle rests on the numerous coping resources that are available on an everyday basis via mobile technology. On the one hand these are technical problem-solving mechanisms that are available through smartphones and the mobile web: the navigation app that enables easier wayfinding in unfamiliar places, the timetable information service that provides information on transport connections and delays in real time, or the review site that assists with restaurant or product choice. On the other hand, besides empowering users to solve practical day-to-day problems, psychological resources are also readily available due to the ubiquitous possibilities of online communication. Omnipresent access to information and entertainment in what were previously often "media-free" spheres of life, such as waiting lines or while in transit, create new possibilities for mood manage-

ment. The permanent connection to a virtual circle of friends can be constantly drawn on for emotional and informational support, and in order to cultivate one's social capital. The ability to post self-authored content online at any time and any place enables new forms of identity construction, the sharing of personal experiences and thus personal affirmation and approval, because of the mostly positive feedback from one's personal online audience.

In contrast, there are also clearly recognisable risks to being constantly connected. Often, rather than personal needs, perceived social expectations and pressures make people reach for the smartphone and communicate online. Social pressure to be constantly available, the "Fear Of Missing Out", and the sheer mass of content communicated, and of notifications and messages received are part and parcel of daily smartphone use. They are also the root causes of "digital stress" for a not insignificant number of people. In social media, continuous confrontation with the often positively distorted self-portrayal by other users increases the risk of making dysfunctional social comparisons. This creates dissatisfaction with one's own life which appears much less attractive and successful. Prioritising smartphone use over other, offline activities can lead to social tensions and conflict with other responsibilities. So-called "phubbing", that is, the use of smartphone in social situations offline, leads to a perceived loss of intimacy and conversation quality by the affected offline parties. In the face of constantly available and rewarding alternatives in the online world, the potential for smartphone messages to distract from work and academic tasks together with the conscious procrastination of unpopular tasks and duties, mean that we face new challenges to self-discipline and new risks to the realisation of longer term goals and personal development potential.

What to do? Possible measures for increased digital autonomy

In a sense, the consequences of "always on" behaviour and of constant online vigilance have a paradoxical impact on our quality of life. On the one hand, the smartphone with its psychological gratifications and variety of functions broadens our personal agency and empowers us in many a situation to behave in new self-determined ways. On the other hand, social pressure to be constantly available, Fear of Missing Out, chronic alertness to "Connection Cues" and that frequent automatic and thoughtless reach for the smartphone curtail our personal freedom. So, what can be done in order to gain back our digital autonomy in everyday life?

At first sight, a plausible answer might be to invest more into addiction prevention. Public discourse and news reports quickly refer to "smartphone addiction" in the write-ups of new forms of mobile use. Considering the - at times overly enthusiastic - uptake of new forms of communication by the youth, one may be forgiven for believing this to be a widespread issue. However, the available empirical data paints a different picture. The inflationary use of the concept of smartphone addiction must thus be prevented, just like the tendency to inappropriately pathologize common usage behaviour. In a scientific context, the terms "smartphone addiction" and "internet addiction" are used only to describe excessive use that leads to a functional loss in day to day life and to severe consequences in work-related and interpersonal contexts (Kardefelt-Winther et al., 2017).

Such forms of addictive use are real and must be taken seriously. Relative to the totality of internet users, they are, however, a rare phenomenon. Representative studies show that those affected by such serious addictive behaviour only make up one to three per cent of the general population (Müller, Dreier and Wölfling, 2017). No robust empirical evidence exists to prove any clear increase in internet addiction in recent years. While the prevention and treatment of addictive behaviour is extremely important, these solutions do not fit the non-pathological "always on" lifestyle that is affecting ever more people.

In order to further digital autonomy across the board, in the sense of self-determined use of information and communication technologies, advancing new media literacy and skills appears to be essential. The central goal must be for young users to have the capacity to critically reflect on their own communicative behaviour, not to bow to the social pressure from peers to be constantly available, and to be more consciously in control of their own use of digital technology. Naturally, parents and teachers are equally challenged by the digital lifestyle. Thus, conveying any competence in this field to their children and students is easier said than done. Investing in continuing education for teachers and in schools' digital infrastructure is therefore an imperative. Furthering digital autonomy in the general populace can also be seen from an entrepreneurial and health policy perspective, both of which are fields in which there is a need to act. Corporate culture would be an important contributor to increased autonomy in digital communication if it encouraged tech-free and the "right not to be reachable" outside agreed working times as important conditions for a healthy work life balance. Especially for companies in the digital economy, the protection of informational self-

determination of their customers must become a core concern. In the health sector, important tasks include the development of a policy agenda that addresses the positive potential of new mobile technology in the fields of eHealth and mHealth, as well as preventive and information programmes on health-enhancing interaction with new technology.

It is indisputable that individual empowerment to be digitally autonomous plays a pivotal role in enabling a self-determined life in today's digital society. The ability to safely balance the tension between digital self-empowerment and social as well as technological paternalism is a core competency that is needed now and in future times to achieve psychological wellbeing and health (also see Meier, 2018). Finally, beside the individual user's responsibility for their own user behaviour, governments have the responsibility to create the parameters for digital autonomy for societies as a whole.

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FAKE NEWS AND THE MANIPULATION OF PUBLIC OPINION

CHRISTIAN REUTER

Christian Reuter is professor for Science and Technology for Peace and Security (PEASEC) at the Department of Computer Science and is also a faculty member of the Department of History and Social Sciences at Technische Universität Darmstadt. His research focuses on interactive and collaborative technologies in the context of crises, security, safety, and peace. He has published more than 160 scientific articles on Computer Science, Information Systems (IS), Human-Computer Interaction (HCI), Computer-Supported Collaborative Work (CSCW), as well as on Crisis, Security, Safety and Peace Research and Social Media.

Per a recent study, a majority of Germans wants to see strict action taken against the targeted spread of disinformation in the news. Researchers in the Science and Technology for Peace and Security (PEASEC) research group at Technische Universität Darmstadt investigated how German citizens perceive and react to fake news and asked them what countermeasures they would consider to be most appropriate.

What phenomena have brought digitalisation to the fore in recent years? What is "Fake News"?

Information technology plays a major role in managing peace and security due to advances in digitalisation (Reuter, 2019) and especially in the ever-expanding roll-out of interactive systems (Reuter, 2018).

At the very latest, the Fake News phenomenon made its mark in public and scientific debate during the 2016 US presidential elections. Debates over Fake News were also ongoing during the 2017 German parliamentary elections. Investigations into the effect of Fake News on the German elections were conducted and showed that Fake News did not impact the outcome of the elections (Sängerlaub, 2017). In the US, there are also claims that Fake News had no influence on election results, despite its multiple occurrences (Allcott and Gentzkow, 2017). The investigations point towards a difference between the perception of Fake News, which influences a person's attitude, and the actual impact that Fake News has. Fake News is visible online and has the potential to influence important social dynamics by affecting user experiences on social media in different ways (Kaufhold and Reuter, 2015; Reuter, Pätsch and Runft, 2017; Reuter and Kaufhold, 2018).

Researchers of the Science and Technology for Peace and Security (PEASEC) research group at Technische Universität Darmstadt carried out a nation-wide representative study in Germany to probe deeper (Reuter et al. 2019). They addressed three key questions: how Fake News is assessed, individuals' experience and handling of such disinformation, and individuals' evaluation of countermeasures targeted at Fake News items. In this study, Fake News is defined as all forms of false, inaccurate, or misleading information that is framed, presented and promoted for monetary gain or to intentionally cause public harm (Kaufhold and Reuter, 2015; Reuter, Pätsch and Runft, 2017; Reuter and Kaufhold, 2018).

Results: The effects of Fake News on society and politics

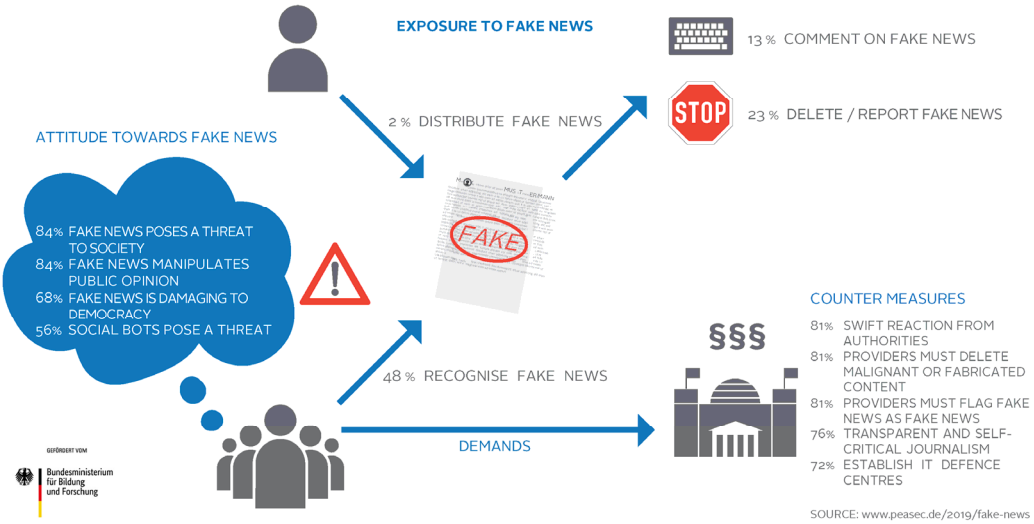
84 per cent of the participants in the study considered Fake News to be dangerous, because it manipulates public opinion. Furthermore, 68 per cent of participants believed that Fake News was damaging democracy. Many German citizens are fearful of disinformation being used to influence public debates and elections. However, the good news is that Fake News's influence has been rather small to date; the German 2017 elections did not see a flood of Fake News. Moreover, the study's results show that, in Germany, Fake News is less likely to occur via traditional media than, for example, in the USA. About half of the participants (48 per cent) indicated that they had come across Fake News on social networks, and only 23 per cent had deleted or reported the Fake News they discovered.

The percentage of participants who had had a concrete experience with Fake News lies between 23 per cent (deleted or reported Fake News) and 2 per cent (created or disseminated Fake News). These numbers may have been skewed by the negative connotation that Fake News has; that is, how undesirable it is in the public eye. With respect to ideological motives, empirical evidence suggests that the spread of disinformation is particularly pronounced within the context of right-wing populism and extremism. Left-leaning or liberal participants were more discerning of Fake News when encountering it. Socio-demographic factors such as age and education levels also have a significant impact on how Fake News is handled: the results proved that younger and more educated individuals are better informed about Fake News.

How should Fake News be handled? What are some of the practical recommendations for action for policy makers?

The majority of the study's participants supported relevant authorities react-

ing swiftly to Fake News. 81 per cent of participants supported social media platform providers deleting malignant or fabricated content and flagging Fake News as such. 76 per cent supported the practice of transparent and self-critical journalism and 72 per cent supported establishing public IT defence centres.



Methodology

The data in this article are drawn from a nation-wide representative online survey, carried out in Germany in 2017 by the PEASEC research group at Technische Universität Darmstadt. The ISO certified panel provider GapFish (Berlin) was used, and the detailed survey results were published in 2019 (Reuter et al., 2019). The sample of participants (N=1,023) was adjusted according to age, religion, education and income levels in order to be representative of Germany's adult population between the ages of 18 and 64. In addition, participants from a wide range of education and income levels were selected.

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TANTRUMS ON A MASSIVE SCALE, OR: COULD ANYBODY BE A VICTIM OF SOCIAL MEDIA OUTRAGE?

CHRISTIAN STEGBAUER

Christian Stegbauer is an associate professor of Sociology with a focus on Network Sociology at Goethe University in Frankfurt. He is currently researching the development of microcultures within relationship structures including everyday behaviour as explored in his book on basics of network research. His current publication "Shitstorms: The Collision of Digital Cultures" applies the findings and shows what the conditions are for the emergence of shitstorms.

One could have the best of intentions and still the opportunities for wrongdoing may be limitless. Not one day goes by without public outrage being expressed on the internet and thus without the spread of hate and verbal abuse. Even only a small proportion of internet users taking offense may have an impact and can result in wide-ranging protests. These events are (perhaps appropriately) referred to as "shitstorms" in Germany. Those who subscribe to ideologies are particularly excitable and prone to creating or participating in such events. Ideologies are necessary in cultures that have not yet stabilised (Swidler, 1986). Thus, when a group of people believes that their point of view is the only one that is true, anyone who has a different world view must be confronted and convinced.

Vulnerability to personal attack from complete strangers started to develop as a phenomenon in its current form when digitalisation came into the picture. Social media platforms, such as Facebook and Twitter, are the conduits for such events as they connect people over vast geographic distances.

Where can one go wrong?

When one finds oneself the target of public outrage on the internet, the question at the forefront of one's mind is: what went wrong? Perhaps one did not consider that numerous groups with their own idiosyncrasies and affinities frolic around, both on and offline. These groups form their own cultures when they create their own world views and behaviours. Sociology defines them as microcultures (Fine, 1979) and they occur in relatively closed-off sections of the social web. When opinions are ideologically and morally charged, the potential for members of these cultures to digitally attack others increases. Moreover, when cultures change offense is sometimes caused

where historically there was none. The misconduct of celebrities, corporations or institutions that had hitherto been considered role models is seen as particularly reprehensible. Thanks to increased reach and visibility through digitalised media, those who were once powerless can now express their views prominently and as a collective.

Cultures build their own world views

Scandalisation sets the stage, then angry reactions and a deluge of complaints follow. The social media outrage is complete, replete with its denigration, insults and threats. The attackers feel justified. They know they are right, because practically all those they interact with on this topic, in their closed internet fora, agree with them. On and off the web, they move through "bubbles" that display little variety in opinion. So-called "friends' " comments that portray a different view are hidden on their private profiles, and those who oppose their views are "unfriended".

These cultures touch on multiple aspects: if somebody wanted to inform themselves about veganism in a public forum, not only would they learn about nutrition, they would also be exposed to the attitudes and ideologies of related specialised cultures. They would witness hunters, farmers and irresponsible carnivores being criticised. The right-wing margins tell the same story; the mission is to change society here too. This culture develops roughly as follows: essentially all announcements are accusations against asylum-seekers, foreigners and those with a different opinion. The purpose of such fora is almost exclusively to pillory strangers. Every action of wrongdoing is recorded and devalues the entire group. Such microcultures develop a special world view. Should any good news involving an asylum seeker make it through to such groups, the story is assimilated to fit their own world view. A newspaper article reporting on an asylum seeker finding a wallet and turning it over to the police is – from their perspective – too good to be true. Such a report must be a lie, it must have been fabricated by the "lying press", the "Lügenpresse" (Stegbauer, 2018).

Diversity is forbidden

Such an environment does not allow for a nuanced world view, which allows complex phenomena to be approached and debated from different perspectives: participants whose attitudes deviate from the dominant viewpoint within such a group can only assert themselves with difficulty and are often excluded. Anyone with a non-conforming opinion is often publicly threatened with eviction from the group. If the threat is followed through and a

person is indeed evicted, this can be ascribed to the group's political goals. However, there is also a long-standing social rule that supports such exclusion: "homophilia" or, in other words, people tend to socialize with those who are most like themselves.

The same social rules and behaviours that apply to public fora are equally valid for most personal social media profiles, and especially for personal Facebook profiles: people are most often exposed to their closest friends' posts and comments. Any news from Facebook "friends" that is not "liked" or commented on is filtered out of one's personal newsfeed over time. Algorithms thus spare people (Pariser, 2010) from information overload; only the important posts are displayed. While this seems beneficial, such algorithms come at a cost: diversity. Only those most like one another hear from one another. Thus, these algorithmic filters and homophilia have the same effect: they create cultural enclaves in which "each keeps to their own".

What's more, though only few participants actively express their opinions and dominate the newsfeeds, these few skew the perception of opinions within their circle of influence. This is because we see an effect similar to the Noelle-Neumann's Spiral of Silence (Noelle-Neumann, 1980): for fear of being socially excluded, the tendency of those who differ in opinion is to remain silent rather than to express an opinion that is in opposition to the majority view.

How only few people make big waves

Some social media outrage episodes are orchestrated – especially those emanating from the far right. A small group of people coordinate to attack their adversary via numerous fake profiles. The biggest of outrages do not, however, rely on such coordination, even though they are fuelled by it. For example, as soon as an accusation is made, the address to send complaints to is made known as a "labour-saving measure". Interested parties prepare the "scandalous" information in such a manner that it can be easily shared on personal profiles. Attempts to instigate public outrage on social media are frequent. However, the information must hit a nerve in the general populace for the scandal to spread beyond a small circle of activists and create a call to action.

Disputes generate more disputes

It is clear from how markedly the contributions from assailants and defenders differ, that cultures really do clash in social media outrage episodes.

Comments from different cultures differ in terms of content and terms used, and there are even differences in grammar and spelling. The social rule of tit-for-tat creates a dynamic of reciprocal taunting. Thus, the insolence takes hold of even the more peacefully inclined (Stegbauer, 2018). Such conflict divides those involved, and the more polarised the debate, the more difficult it is to resolve.

How can one survive the storm?

If the conflict has become especially fierce, it could be useful to seek out broader public opinion. This is applicable especially if the attacking culture holds minority views within the bigger cultural picture. By doing so, companies that have found themselves under attack have in fact encountered customers who have explicitly defended them. Examples show that accusations can be converted into something positive by engaging with customers who support the company. Those supporters then co-create a "firewall" together with the company. This might strengthen customer loyalty as customers step in for the company and highlight its positive aspects. Germany's green political party would love to see such support rally around them – in hopeful anticipation, this phenomenon was named "candy storm", the antonym to "shitstorm". However, masses of praise without any imminent threat in the air tend not to have the same effect or be as effective in garnering loyalty and highlighting positive aspects.

In some cases, concessions can weaken the opponents' arguments, however most protesters are not interested in discussing the issues at hand, as their views are already set in stone. The duration of an outrage episode tends to be short. Additionally, protesters sometimes fight among themselves. This is not to say that such an event does not have the potential to wreak havoc.

Some emerge from an episode of social media outrage in better shape, such as when the yellow press builds a minor protest up to be more significant than it is, fuel social media outrage, and thereby keep public interest in celebrities alive. Such attention could then be transformed into fame and advertising contracts.

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"WE HAVE ALWAYS BEEN LIVING IN BUBBLES" THE OPPORTUNITIES AND RISKS IN THE DIGITALISATION OF MEDIA

VOLKER SCHAEFFER

Volker Schaeffer has worked as an editor, host and author at newspapers and media outlets of the German Broadcasting Service ARD for over 30 years. In addition to his teaching assignments, he is a member of the board of the Literaturhaus Köln and a Mercator Science Policy Fellow.

Mr Schaeffer, what did your working day look like at the beginning of your career in journalism?

It was in 1986, so it was still very analogue: telephones with rotary dials and typewriters with Tipp-Ex correction fluid. At the newspaper, where I started as a reporter, they had just got their first computer: a big box with green flickering text. Articles were saved on floppy discs. In the radio studio there were records and tapes and, the height of digital modernity, the first CDs.

How have digitalisation processes affected you?

These changes took place gradually and you have to differentiate between different digitalisation processes. On the one hand, the digitalisation of production processes, in other words the way newspaper articles and radio reports are created: from typewriters to computers, from tape recorders to hard drives. This transition was largely complete by the year 2000.

And on the other hand, the digitalisation of the creative process and the process of consuming media, i.e. the relationship between the broadcaster and the audience. It has all fundamentally changed. The linear product, completed at a certain time, like a newspaper or a TV programme, has in many cases turned into a non-linear product that is played on different channels and is being constantly changed. There are no deadlines anymore. Things can constantly be updated and there are many outputs and platforms, and the metadata need to be taken into account. This naturally affects the way I think and work – it's no longer linear from the beginning to the finished product that I hand over to the recipient, but rather onion-shaped, circular and with different layers: "If you are interested in that topic then you might be interested in this topic."

And in the digital age there are of course far more opportunities to investi-

gate and and learn about the behaviour of readers, listeners, viewers and users. That, in turn, has an affect on our work: At what point did the user click out when reading an online article? Should I incorporate more cliffhangers to get more attention? What is the relationship between content, form and sales?

I do also notice, however, that certain analogue ways of working have never changed for me.

Can you give us an example?

My writings are still created today on a computer as they once were on a typewriter. As a reporter, I have always worked under pressure and with a deadline. Therefore, I had to have a plan from the start for what I wanted to say with my text and how I wanted to say it. So I thought about the content and structure in advance. Of course, it wasn't possible to make major revisions, or at least it would have required a lot of effort when typing on a typewriter. The clock is wound up beforehand and virtually unwinds while you're writing.

In contrast, working digitally is more trial and error. After all, it costs nothing to overturn everything again and correct it.

In my heart I still like to be an anonymous analogue guy with a purposeful way of working. But I am of course also happy about the digital blessings that have made research significantly easier. And about the potentiation of the outputs. And about the possibilities of being able to, as a journalist, better serve people with specific cultural interests.

What trends do you see in your audience?

The audience for quality journalism has a lot more opportunities to be a part of the process and contribute with their opinions. The user is also no longer just a receiver, but also a broadcaster: Discourse is possible because there are fast feedback channels. Bertolt Brecht's demand can finally be realised: "Radio must be transformed from a dissemination apparatus into a communication apparatus!"

This is the hope-impregnated answer of someone who is dealing with cultural content that is sometimes difficult to digest: cultural journalism in the digital age offers a platform for contribution and collective intelligence. Society is undergoing a process of continuous enlightenment by digital means.

But attention, time for a reality check: sometimes this dream works, but often it sadly doesn't. Many recipients also don't have any desire to take part in

discussions. They just want to consume something that is on offer or just to let themselves be entertained without becoming active themselves.

Does quality journalism inevitably suffer if audience wishes, which have now changed, have to be met?

I would be lying if I said "no" to that now. Journalists today have less time to develop their thoughts, even discuss articles sometimes, let them rest or even reject them.

In the best case, quality journalism changes in the future, because, due to the the duplication of outputs with a professional error culture, it is put to the test more often than ever before and contemplates how it can continue improving. For lovers of certain genres and topics, the non-linear expansion of content does of course also offer advantages: People who are interested in, for example, the current "status of the rapprochement between North and South Korea" will find what they want more quickly than in the analogue times of paper. But, given the idea of newspapers or broadcasts being a "lucky dip", quality journalism misses the opportunity to place other, perhaps unexpected topics next to the desired topic as "eye-catchers". And hey presto! I'm sitting in my echo chamber of the digital age and am only hearing what I want to hear!

Do you ever wish you could go back to the time before smartphones and social media?

Absolutely! Sometimes I dream of Friday afternoons at the news desk of the paper. The articles needed to be written by 3pm but the photos wouldn't have been developed yet. So we would spend time chatting, smoking and finishing off a bottle of sparkling wine. Until 5pm when the photos for the articles arrived and we could finally write the captions. It's unthinkable today!

Do online firestorms, fake news campaigns and echo chambers affect your everyday work?

I wouldn't say they "affect" it in the sense of "define" or "dominate" it, but they are of course topics which we also pay attention to as journalists.

People who consume so-called quality journalism are not "better people". Because even a supposedly enlightened audience is sometimes a little too trigger-happy with the send button, meaning discussions don't always go in the direction of enlightenment and gaining knowledge via dialogue, but rather in the direction of "I'm going to give you media types a piece of my mind!"

With “fake news” or “alternative facts”, the question arises as to whether fact checks are the method of choice, because often, the opponent doesn't want to be won over. As a facts and evidence driven journalist, acknowledging that is very difficult.

And in terms of echo chambers or bubbles, we have always more or less lived in bubbles, both when I used to get my information from the New York Times, The Economist, the Neue Zürcher Zeitung or the Süddeutsche Zeitung in the analogue age, or today from “nerd” communities on digital platforms. It's important to be very aware of it and to have mechanisms for dealing with it. It helps me as a journalist, for example, to not own a car and therefore get around mostly on public transport. On buses and trains I see lots of things that certainly aren't written about in the New York Times or discussed in my bubble.

Do you expect increased state intervention through laws and regulations here?

I'm putting my money rather on a mixture of civil society and technology. Do we really need to let every troll provoke a response from us? A certain equanimity, combined with clear requirements for platforms like Facebook and Twitter to deal with abusive comments from users will help immensely. And regarding technology, The Washington Post already has a system in place that scans user comments for offensive phrases, meaning the editors can intervene more quickly than before.

What role does artificial intelligence play in broadcasting? Is any content already being written by machines?

In journalism, everything that happens repeatedly, so everything to do with routines, is either already being done by machines or will be in the future. The same is true for the creation of stock exchange reports in business or the results in sport, for example. But if the spectators are fighting with the referee on the football pitch, I still need a good reporter as well.

Will machines replace humans in the long run?

They will definitely take over more tasks than in the past. If it goes very well, then we as journalists will have more time for our favourite pastimes, classifying and explaining the world. So, the machines do the boring data work, research and supply the foundation, and journalists then write the article or create content for radio, television or online media. This hybrid journalism has advantages, but it will only work if we learn how to sensibly handle the

algorithms early. As in the past, mechanisation has always lead to an intensification of work.

How do you think traditional media will develop in the next few years?

In the best case, we will manage to maintain and maybe even develop a good environment for quality journalism. I'm thinking of a network of expert knowledge and content. Everything else has already changed or will change at a rapid pace. Brands that function as newspapers or radio or television broadcasts will either rapidly disappear in the digital age or will need to be reinvented. There will continue to be listeners, viewers and readers who prefer a linear product, but there will only be fewer of them. Most young people don't have a radio or television, but luckily, that doesn't at all mean that they don't have an interest in information and entertainment – especially in discussions. Debates just don't take place in a small circle anymore, confined to paper or in a broadcast, but rather in digital forums much more purposefully. Because complex and difficult topics have a wider reach online than in mass media.

DIGITAL TRANSFORMATION OF THE WORKPLACE – RISK OR OPPORTUNITY?

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The digital transformation of the workplace is creating technological and structural change that is impacting on a variety of professions and occupations. This article aims to describe the status quo of digitalisation in the workplace and to assess the resulting opportunities and risks for companies and their employees, as well as future developments, needs and requirements. Finally, organisational design recommendations for the digital transformation of the workplace will be discussed from a psychological perspective.

The spread of digital technology in the workplace

Digitalisation has already arrived in the workplace. In a survey of organisations with 20 or more employees, all participating organisations declared that they use email often to very often for internal and external communication (bitkom, 2018). About half the companies use mobile and smartphones (51 per cent) as well as online meetings and videoconferencing (48 per cent) for communication. Almost 40 per cent use SMS service providers or messenger apps (38 per cent) as well as client and employee portals (38 per

cent). The use of social networks (25 per cent), chatbots (virtual personal assistants, 13 per cent) or company blogs (5 per cent) is less common. Widespread availability of the internet coupled with capable mobile devices allows many professionals to work flexibly and autonomously, and to be location independent. Their work environments range from home offices to coworking spaces.

Opportunities and risks in a digitalised workplace

Employees hope to gain a better work-life balance (46.5 per cent), more time flexibility (43.3 per cent), and easier access to necessary information (41.3 per cent) from digital and mobile workplaces. They are, however, concerned about a higher reliance on IT infrastructure and an internet connection (46.2 per cent), the obligation to be reachable for extended hours for work-related purposes (41.3 per cent) and surveillance by new technologies (38.4 per cent). Personal privacy is particularly relevant when talking about surveillance. Companies are once more paying increased attention to data protection, since the EU data protection regulations came into force in May 2018, and since the publication of hacked password databases (e.g., Scherschel, 2019). The use of private devices for work purposes, for example, also known as "bring your own device" (BYOD) not only has the benefit of increasing employee flexibility and reducing company expenses, but also increases security risks for company data (e.g., Gosh et al., 2013).

Schwarzmüller et al. (2018) outline four core areas via which the digital transformation is impacting the workplace:

- Effects on work-life-balance and health: Increased flexibility of time and location means that work and personal life are more compatible, yet there are also dangers in employees being constantly available and in the lack of boundaries between the professional and the personal. Moreover, digitalisation increases the density of information and work pressure employees deal with. Decisions have to be made quickly and when faced with uncertainty. Employees feel overwhelmed and have difficulty getting enough rest (Badura et al., 2018).
- Increased use of information and communication technology: The increased use of technology at work allows for higher standards, the provision of support to and control of work processes. Many aspects of work are becoming more automated and the importance of knowledge -based work will increase. In addition, communication is happening more and more via new media, resulting in new forms of collaboration

(e.g., virtual teams). Managers are leading their teams over increasing distances and are using a variety of communication channels to stay in touch (e.g., messenger apps).

- Changes to performance and talent management: With work becoming increasingly mobile and virtual, competencies in IT and problem-solving, as well as lifelong learning are becoming essential. Working in digital environments and on shared documents increases the transparency of work processes and leads to more results-oriented work.
- Changes in organisational hierarchies: Organisational hierarchies are becoming flatter due to transparency and the improved flow of information (e.g., corporate wikis). Employee participation in decision-making is also improved with the use of digital tools (e.g., feedback apps).

The risk that a digitalised workplace poses is less so the increased use of digital technology and more so the work arrangements and conditions for the technology's use (PsyGA, 2019).

Future developments in, and needs and requirements for a digitalised workplace

Companies consider the availability of IT infrastructure (50.9 per cent), missing platforms and standards (26 per cent), and the selection of effective applications for collaboration (22.5 per cent) to be the technological challenges of workplace digitalisation (Statista, 2019). They see additional challenges presenting themselves in the areas of data safety and security (48.8 per cent and 45.3 per cent), and in operational safety (35.1 per cent). Technical developments like the increased networking and communication capacities of intelligent devices in the "internet of things" (Mattern and Flörkemeier, 2010) are further accelerating digitalisation. Thus, companies and their employees have the opportunity for even more flexibility concurrent with increased responsibility to shape their own working conditions. Aside from the availability of IT infrastructure, a further need presents itself in how employees and digital technologies can interact while preserving data safety within the company.

Design recommendations for the digital workplace

If employees are working on increasingly flexible schedules, independently of location and more autonomously, job designs must be needs-based and customised according to the company's and the employees' requirements

(IFAA, 2018).

The following recommendations can be made at the organisational and managerial levels (Schwarzmüller et al., 2018; IFAA, 2016 and 2018):

- Effects on work-life-balance and health: Create healthy working conditions concurrent with sensitising managers.
- Increased use of information and communication technology: Create transparent and binding rules, and clearly formulate expectations.
- Changes to performance and talent management: Offer training and qualification programmes in IT and in the development of problem-solving competencies; Establish a culture in which mistakes are dealt with constructively.
- Changes in organisational hierarchies: Establish a culture of trust and a people-oriented leadership style (cooperation, recognition).

Recommendations for the design of human-technology interaction

Within a single firm, the interactions between people, technology, processes and external factors get very complex. Increasing digitalisation, networked devices and automation further contribute to the complexity.

In order to ensure data and operational safety within the context of digital transformation, companies must be seen as a whole, so that all available resources are considered. There are limits to the attempt to entirely replace human occupations with automation. These limits present themselves, for example, in cases of decision making under uncertainty and in the ability to improvise. Automation can also lead to misunderstandings and problems in the interactions between people and the technology (Sarter et al., 1997). As "team players", technologies should be created so that it is clear who is responsible for what aspect of the task at hand, what condition the team partner is in, and what their intentions are (Klein et al., 2004). This can lead to increased organisational resilience, enabling an organisation to recover more quickly from unexpected events such as an attack on its data (Hollnagel et al., 2006).

The interface of an IT-operated external infusion pump serves as an example from the health sector (Nemeth et al., 2008): As a "team player", the device shows medical staff the current course under current settings, and the future course at any given setting. A graphic display supports pattern recognition and quick treatment in case of any unexpected developments.

Underlying design recommendations can be drawn from the use of digital technology in a variety of fields such as security, communication or production technologies. When combined with the recommendations for organisational structure and leadership, human beings with their strengths and their needs could take centre stage in the design of the digital workplace.

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DIGITAL TECHNOLOGY IN SCHOOLS

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Digital technology - between social challenges and educational traditions

Schools in Germany have been using electronic, or more specifically, digital media since the 1990s to varying degrees. The first more comprehensive experiences were made with the introduction of "notebook classes" in the late 1990s, when desktop computers were also being installed in school computer labs. However, the introduction of mobile tablets and smartphones and their related applications has led to a stronger presence of digital media in the German classroom across the board. Social networks, applications and digital educational materials have played a special role in the school learning environment for about ten years now.

This development is being supported by various educational policies (Bastian, 2017). The challenge is to bring technological innovation into harmony with traditional pedagogy, as well as with political, societal and economic demands. Schooling is thus torn between two drivers: on the one hand, a school is an institution ruled by the primacy of pedagogy; on the other hand, schools are expected to prepare their students for a future that is determined by social change. Anyone who attempts to integrate digital media into the school curriculum must grapple with this contention. Thus, when considering the use of digital technology in schools, the questions of what technology is best suited to certain learning objectives, how easily it can be integrated and how teachers need to be trained for its use, are not the only

questions to be asked. Rather, the following questions must be at the forefront of people's minds: what pedagogical goals can be achieved with the use of digital media? Are these goals justifiable? Do they truly contribute to the role of a school? Do they improve the quality of teaching and learning?

When these questions are asked, the development of schools connects pedagogy with issues around educational content and technological knowledge, for example, as per the TPACK model (Koehler and Mishra, 2009). Thus, the assessment of technology use in schools goes beyond the contemplation of purely technical aspects. Also addressed are questions about how pedagogical goals can be achieved with the use of digital media and how these goals correlate with lesson plans and the curriculum. All actors should support and feed into this process which can never be considered done; it requires continuous review and modification.

How digital media change lessons and learning

Greater integration of digital media into schools is also leading to new forms of teaching and learning, changes to the classical structure of lessons and the communication between teachers, learners and their parents.

Digital media create the potential for more self-directed learning. Students frequently prepare for lessons by watching explanatory videos, drawing on digital research to build their knowledge, or completing digital tests to check their understanding. As self-directed learning is increasing, the teacher's role is changing, too. Increasingly, teachers are choosing appropriate digital materials and facilitating the self-directed learning process.

Communication is also changing apps and social networks allow school officials, including teachers, to communicate more easily and closely with parents in order to better inform them of new developments and educational offers. Digital applications are also providing new avenues for closer communication and cooperation between students themselves. For example, students might collaborate on creating presentations and writing essays. They are thus more likely to participate in group work.

These developments mean that innovative ideas are called for which address how lessons can be different, better, and perhaps even designed in completely new ways (Bastian and Aufenanger, 2017).

Of course, the teachers explaining things and answering questions remain as classic elements of any class. Beyond these elements, however, students must be encouraged to use their own initiative in order to make use of the

new potential that digital media bring to the table.

Nowadays the learning process is not only seen as a process of absorption of information and knowledge; much more, it has become a challenge for students to build their own knowledge base independently. In this context, digital educational tools encourage a student's initiative: from autonomous research, via the collection and evaluation of data, to the presentation of class projects, teachers entrust students with delivering more than just pure repetition.

What does the future hold?

Trends indicate that we will soon see the introduction of Augmented and Virtual Reality into classrooms. This technology will, for example, help to illustrate topics in the natural sciences, such as radiation or the inner human body, that would otherwise be inaccessible and are difficult to explain and visualize first-hand.

Adaptive learning systems will also play a greater role. They support students in the learning process by adapting to different learning environments and strategies, as well as to students' knowledge levels. If a student already has a lot of knowledge on a topic, the system automatically offers more advanced assignments and, for example, more complex language. On the other hand, should a student display learning difficulties, an adaptive learning system will provide appropriate support and simplify linguistic expression and assignments.

In addition, we can expect to see more data driven "learning analytics" to enhance successful learning. Such analytics enable adaptive learning systems to develop and refine their tailored support, and also play a role in assessing the effectiveness of the teaching models and materials being used.

Finally, the marketisation of education will play a significant role. Large media companies have the human and material resources to develop learning technologies which could challenge the role of schools as a place of learning. They also have the potential to develop alternative education models or to influence education policy where governments can no longer shoulder the high costs of digital education on their own. It follows that educational science and media pedagogy play a central role in critically assessing such developments in education.

Problem areas of digital technology in the context of schools

The potential that digital media hold should not distract from problem areas

that must be addressed and tackled with the increased use of digital media. As part of this, students must develop appropriate digital competence and learn to interact with digital media in socially responsible ways, especially with and within social networks. In order to navigate the internet safely, students must be able to discern where data has come from and where it has been processed. They must also learn how they can defend themselves from – or better yet - entirely prevent digital attacks on their privacy.

These competencies must be fostered along with many others, and schools play a central role in this.

An important cornerstone was laid with the strategy paper "Education in the digital world" (KMK, 2016) that was presented at the conference of German ministers of education and cultural affairs. The paper describes six overarching competencies that students need to have acquired over the course of their school years; not only in one specialised subject, but at an interdisciplinary level.

However, more than a strategy paper is required to successfully translate theory into action. The education of and the continuing education of teachers in these competencies is also necessary, so that teachers can acquire the competencies themselves, then develop and master appropriate pedagogical and didactic tools in dealing with digital media, then convey the competencies to their students. Currently such an education programme is not sufficiently developed in any of the phases of teacher training (van Aackeren et al., 2019). Of course, schools must also be equipped with the digital media themselves and their supporting infrastructure. This would allow for competencies to be developed via direct exposure to and experience with the digital media.

Moreover, it is important for teachers to not only become experts in teaching and learning with the aid of digital technology, but also to understand and respect the digital environment their students live in. In practice this means, for example, to not ban mobile phones from schools without the necessary reflection - carried out together with the students - on why smartphones and social networks can interrupt lessons. Such a collaborative approach to solution-finding can be enlightening for all participants.

There is still much to do in German schools to prepare the current generation for a future that will be heavily impacted by digital technology. The special role of schools should not be neglected: to support the development of self-determined personalities who have learned to act competently and in

socially responsible ways.

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DEVELOPMENT ASSISTANCE GOES DIGITAL– THE OPPORTUNITIES AND CHALLENGES NON-GOVERNMENTAL ORGANISATIONS FACE IN DIGITAL COMMUNICATION

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Digital change brings about a profound change in society, life and work. Even non-governmental organisations (NGOs) involved in development assistance and humanitarian aid are affected by the transformation. Expectations that global digitalisation will lead to more participation, democracy and social justice are high. It is uncertain whether or not these hopes will be fulfilled. What is certain, however, is that many NGOs have already recognised the opportunities provided by communication technologies and artificial intelligence, and are incorporating them into their everyday communication practices. However, this is just the beginning. It takes smart strategies and the courage to make profound changes within organisations to make the change successful.

In NGOs, digitalisation is often still equated to the use of digital technologies, especially in communications and in the administrative sector. Facebook, Twitter, Instagram and other platforms have long since taken a firm place in the communication mix of many organisations. This has been very successful. However, this is not surprising since, NGOs often offer information with a higher socio-political relevance that interests and moves online users, unlike many businesses from the profit sector. Early on, NGOs recognised the opportunity to improve their public perception and to put more pressure on their demands by using digital communication channels. They collect signatures for petitions, start crowd-funding campaigns or global social media campaigns. Through these new digital channels, NGOs can now get their messages through to people who they would never have been able to reach with traditional communication channels. Increasingly, NGOs are implementing new technologies and testing their impact. In this sense, it is always

about the question of how the remote project world can be made experienceable and tangible. Attempts by individual NGOs to use virtual reality technologies that, often with the help of digital glasses, immerse users in the programmed reality of the project have been well received by test subjects. A 360° experience on an NGO's website, in which the user was able to move around a 360° photo and view information using the mouse pointer, was also well received. Augmented reality elements in donor magazines, which meld print with moving images through the use of an app, are another opportunity for technologies to be used to provide readers with much information and a distinctive experience simultaneously.

Not technology, but a so-called "child" of digital communication, is the area of "influencer relations", which plays an increasingly significant role in NGO communications. So-called "influencers" recount their experiences of project visits in videos and support online campaigns with their Youtube channels. They reach thousands of young people between the ages of 15 and 29 and use their language and way of speaking, behaving spontaneously and emotionally. This means the posts are well received and understood by the target group. In order to succeed when using this alternative form of reporting, it is necessary for NGOs to give up their information sovereignty and to have only limited scope to intervene in content.

The downside of a strong online presence: The clearer and more prominent NGOs position themselves online and the more intensively they report, the more often they become a target for hate that is mostly racist, misanthropic and anti-democratic. There is hardly an NGO fighting for climate justice, human rights or children's rights that has not already experienced an online firestorm and had to learn how to deal with it. Communication strategies to deal with hate messages, the development of a community and precise data analysis regarding which content is aimed at which target group are essential requirements in dealing with this abuse.

For NGOs, addressing the use of digital technologies is of great importance for another reason: digitalisation offers an unprecedented opportunity to make the work of NGOs more effective and impactful and therefore to make every penny donated even more cost-effective and cost-saving. However, many NGOs have a lot of catching up to do when it comes to investing in digital technologies. Unsurprisingly so, as NGOs are not exactly known for being at the forefront of digital progress. After all, it is the mission and goal of a reputable NGO to invest a maximum of the money entrusted to them

into project and programme work. Financial resources are as limited as the opportunities are promising. However, experts believe that it will be worthwhile in the short to medium-term to invest in the optimisation of online content with downstream automation processes and more user-friendliness in order to create new target groups and to generate more donations. Current figures show that the share of online donations in total donations in Germany has risen from two to an average of 20 per cent in recent years. Therefore, it makes sense to focus more strongly on the users and their needs and to provide the desired information easily accessible, transparently and more securely in order to foster this development.

Technological innovations have also found their way into long-term project work and humanitarian aid. They can support or even improve the work on site. Digitalisation has the power to make political and economic participation, a significant reduction in poverty, and global networking possible. The ambitious goals of the 2030 Agenda for Sustainable Development seem to be within reach. However, the realisation is bitter, as almost half of the population worldwide still have no internet access, even though the number of internet users has tripled in recent years. Ninety per cent of all people without internet access live in countries of the Global South and women are more likely to be affected than men. Many NGOs are very concerned about this development and take the position that advancing digitalisation is making the gap (the digital divide) between the Global South and North larger rather than smaller.

There are already lots of ideas and approaches on how digital innovations can be developed together with local partner organisations and how they can be tested in crises. For example, a Dutch NGO had positive experiences with an e-learning service for children in a Jordanian refugee camp: the Syrian children there had hardly any access to education. Using the learning app, these girls and boys can develop their reading and writing skills. Other organisations offer solar-powered tablets with interactive learning games, known as "serious games". The software gives the boys and girls immediate feedback on their entries. This is supposed to develop independent learning for children when neither schools nor teachers are available.

An example from health care: various organisations offer mobile apps for the early detection of malnutrition in infants and to support medical aid. In Somalia, for example, the work of health workers is thus made more accessible. They are to document relevant patient information via a smartphone and

receive regular training via an app.

With these developments, a logical consequence of increasing global digitalisation is already becoming apparent: it is not enough for NGOs to use digital technologies for communication and programme work. The digital transformation continues: it increases the institutional pressure on NGOs to adapt. Organisations will need to fundamentally change if they want to take advantage of the opportunities of digitalisation and help to shape social change: capacities and knowledge must be developed, and organisational structures, processes, the culture and working practices must be examined and adapted to the market needs. Addressing and managing digital transformation is becoming an increasingly more significant task of non-government organisations. Alongside the traditional development cooperation, in the future, it will also be essential to face the political challenges of fair digitalisation and to act upon these.

DIGITAL INTERACTION AND COMMUNICATION IN SPORTS

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Introduction

Whether professional or amateur sports, both are - like all other aspects of society - deeply affected by digitalisation. From the recording and processing of data, to data modelling and simulation, to the presentation and communication of and the interaction with data, all major aspects of digitalisation are found in the world of sports (Wiemeyer et al., 2010; Baca, 2015). Digitalisation is used in sports competitions, training, and learning interventions. Other important fields of application in sports also include knowledge, information and communications systems. The core of sports research focuses on two themes: research on human performance in different contexts (e.g., high performance sports and health-related sports) and on targeted measures that influence this performance; and research on information about and the communication of sports performance and activities.

The main theme of this working paper is the critical assessment of the influence that digitalisation has on communication. The following two examples illustrate both the possibilities and the challenges of digitalising information and communications processes in the world of sports.

Example #1 - Internet coaching

At the professional level many sports disciplines require athletes to travel all over the world to compete. Yet in some disciplines it is not customary for a coach to accompany the athlete. Coaches therefore face a challenge: how to provide high quality coaching from a distance. Internet coaching is a possible solution, where communication between the coach and the athlete occurs over long distances without them needing to be physically present in the same place.

Link (2006) has, for example, developed a special web interface for such

long distance coaching in beach volleyball. Both the coach and the athlete can analyse videos together, despite geographic distances between them. They can comment on and annotate these videos, and they can illustrate strategic moves and exchange audiovisual information via a special white-board.

Link is able to prove that internet coaching changes the structure and content of the interaction between coach and athlete. Internet communication is significantly more task-oriented and focused than face-to-face coaching. In face-to-face coaching, the coach and athlete spend more time trouble-shooting problems, and the conversation is less visually oriented with more time spent on social exchanges. Internet communication offers a wider variety of avenues of expression, topics of conversation change more rapidly and there are fewer pauses in the conversation. The dominance of the coach is more pronounced during these internet communication sessions. Thus there is a propensity for the power imbalance between coach and athlete to become more pronounced.

Example #2 - Information and communications systems

Sports are a social phenomenon with a positive connotation for most. This is reflected in communications in sports. Digitalisation - especially the internet - has brought about significant change here (e.g., Horky, Schieler and Stierl, 2018). The quasi-monopolistic traditional mass media outlets (particularly the press and TV) once transmitted sports news unidirectionally. However, sports aficionados with an internet connection now have the opportunity not only to connect with other sports fans via digitalised media, but also to actively participate in broadcasting information. These new avenues of communication and interaction are especially evident in "niche sports" that are only rarely represented in the mass media.

The website of the German Olympic Sports Confederation (Deutscher Olympischer Sportbund, DOSB) reveals that the organization currently, as of 29 March 2019, uses Twitter, Facebook, Instagram and YouTube. Anyone who is interested in sports can therefore personalise their own web content and newsfeeds. A further look at the different posts on the DOSB's social media networks reveals that highly heterogeneous content is being created, ranging from personal opinions to professional reports (cf. Horky, Schieler and Stierl, 2018).

However, sports clubs and associations sharing information with their fans is not the only way social media is being used in sports. A variety of other types

of interaction take place via social media as well; for example, "fans can now directly communicate with their star athletes and clubs and vice versa" (Grimmer and Horky, 2018, S.18). These digital practices are potentially value-added, as they provide opportunities to carry out research and gather information, to exchange and network, to sustainably grow an audience, to market and advertise, and to establish intimacy. However, these practices also create a plethora of challenges, such as dealing with potential insult and hate campaigns and hounding, widespread public outrage expressed via social media (termed "shitstorms" in German), invasion of privacy through stalking and mobbing, and videos, photo and text copyright violations.

Sports journalism, too, has seen the downsides of digitalisation: why should an athlete participate in an interview that has the potential for conflict, if they can publish their viewpoint in an unscrutinised social media post? It is obvious that the role of the (exclusive and autonomous) intermediary between sports and sports consumer has been restricted as a result of the increased use of social media (Grimmer and Horky, 2018).

A further facet of digital communication in sports is the discovery of scandals (von Sikorski and Hänelt, 2018). Social norms, such as fair play or equal opportunity, are frequently violated in the world of sports, which is heavily characterised by normative ethics. On the one hand, ubiquitous, digitally connected technology can aid in discovering and sanctioning such violations; on the other hand, there is increased propensity to make false accusations and allegations.

Conclusion and outlook

There is no doubt that digitalisation has changed sports significantly. The numerous new possibilities for communication, participation and digital networking are countered by a variety of challenges and dangers, such as the manipulation of information and threats to privacy, personal integrity, and information security, among many others. Policies and potentially statutory regulations are needed in order to establish an adequate balance between different participants' reasonable needs.

Digital technology will continue to develop – including in sports in particular: technical capacity and ubiquitous availability will without a doubt increase. Video drones, 360 degree views and virtual technology are already in use, for example (Hebbel-Seeger and Horky, 2018). Furthermore, live streaming will gain in importance as transmission capacities improve and can better convey a sense of personal presence (Burk and Grimmer, 2018). Closely con-

nected with the latter is the increasing, ever harder to monitor infiltration of private and public spheres. On the one hand we have increased transparency and participation, on the other disinformation, manipulation, violation of personal integrity and ever fewer private spaces to withdraw to. The online streaming of the terrorist attack in Christchurch, New Zealand on 15 March 2019, shows that lines can be quickly overstepped. Appropriate technical, political and legal parameters must be established to maintain a healthy balance.

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