The Citizens' Internet

The many threats to neutrality

by Ralf Grötker

NETOPIA

Forum for the Digital Society

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Foreword

Any analysis of the impact of digital technology on our society starts with technology rather than society. It is built into the question: technology first, impact later. With this perspective, it may appear as if technology evolves in a vacuum, only to late be released and applied to the normal world. This attributes a lot of influence to technology: given the right circumstances, technology can be expected to fix jobs and growth, but also new forms of culture and freedom for the oppressed. Or it could drive us toward a surveillance-state, middle-class jobs lost to robots and hyper-capitalism with companies more powerful than states. Whether you ask a techno-optimist or –pessimist, the basic assumption is the same: technology impacts society.

The most recent example is the topic of network neutrality, which has become the focus of policy-making in both Brussels and Washington recently, with the European Parliament's vote for network neutrality in April 2014, the US Federal Communications Commission's ruling on the same issue in February this year and the draft agreement from EU member states this March. Again depending on whom you ask, network neutrality is either the solution to freedom and democracy online, or the end of innovation and network investment. Either the internet will end up with slow and fast lanes, further enforcing the winner-take-all dynamics of the network economy, making bigger companies stronger and smaller weaker. Or network neutrality regulation would stand in the way of digital life-and-death matters such as road safety management, connected or self-driving cars, remote surgery and other tele-medicine applications.

Network neutrality is based on the idea that infrastructure is independent from content. That may have been the case with the telephone networks of the 20th Century (often state-owned) and the cables distributing television. However, today we see content and infrastructure merging. Internet services make operating systems for mobile phones, invest in data centers and even offer of

high-speed fiber subscriptions to consumers. Device manufacturers operate software marketplaces where third party developers can only offer apps tailored to specific hardware. Internet access providers develop content services and shape traffic to protect their business models. The celebrated "end-to-end"-structure of the network is challenged by the walled gardens of apps and the expanding domains of cloud giants. And the network technology itself changes, with content delivery networks storing popular parts of the internet's content close to the user rather than on the original server. In contrast to this trend of centralization, there is the opposing trend of fragmentation: public wifi-hotspots connecting users without involvement of telecom operators. The machine-to-machine communication of the so-called Internet of things which often uses different communications channels than the regular TCP/IP-standard internet. Thumb drives with storage capacities far beyond the day-to-day needs of average users allow for swapping files in "meatspace", the so-called sneakernet. And as increasing amounts of internet content is locked away behind passwords on the deep web, there is no longer one unified internet, but many. In this complex landscape, is a simple principle like network neutrality relevant for regulating technology? Is the infrastructure visible?

These thoughts inspired me as editor of Netopia – Forum for the Digital Society to ask Ralf Grötker, the author of this report, to take a different approach. What if we don't start by looking at technology and its impact? What if we instead look at what we want to achieve – pluralism, freedom of expression, public participation – and then ask how this impacts technology? Would we then arrive at completely different solutions? The answer to that question is yes. The answer to those solutions is this report. I hope you will find it as inspiring as I have.

Brussels, March 2015
Per Strömbäck

Editor Netopia

The Story[1]

In many European countries stringent laws regulate political campaign advertising on TV. From the blanket ban on political advertisements on UK, Irish and Swiss TV screens through to a system in other European countries where equality of exposure per party is employed. The latter aimed at facilitating fair public debate to avoid a distorted slant where wealthy groups bankroll their campaign and influence voters. Similar rules apply to other sectors of the mass media. In Germany, for instance, newspaper wholesalers are forbidden from selecting which titles they distribute. As a rule, even small newspapers can demand to join a wholesaler's portfolio. The service which wholesalers are obliged to offer goes as far as to include handling returns. In other instances there are similar regulations in place to ensure public opinion formation follows non-discriminatory principles of content and actors, freedom of opinion, plurality of information and balanced reporting by the media.

We shouldn't take for granted that things stay as we designed them previously. As the media spectrum shifts towards digital services, commercial organizations - many of them based outside the EU - are increasingly able to decide the kind of content and which class of communication constitutes the public sphere.

When customers have abandoned current telecom providers, and switched exclusively to Skype, Viber, WhatsApp or alike, emergency call numbers like 112, 110 and 999 will no longer be available. There is – yet – no law that obliges Skype et al to offer an emergency service. And some day when Google TV dominates what we watch, there will be no such thing as rules for non-discrimination or cultural diversity. Should Google decide to run a campaign for a political party in its media program, we would be hard pressed to stop them.[2] The same holds for the other giants in digital services, such as Amazon, Facebook, Apple, and Twitter. They, too, could purposely filter out or in the content they deem fitting of their political agenda or their commercial interest. What we are facing is, in other words, a less healthy public sphere.

Historical precedent: The history of the newspaper

As often stated, the main driver for the changes we are observing is the Internet. But it is important to recognize that the Internet only represents the latest chapter of a story whose origin can be traced as far back as mid-nineteenth century USA. Then newspapers were hugely popular among US citizens, not only in the larger cities, but also in small towns and farms dotted around the countryside[3]. In fact, the US boasted a higher number and greater diversity of newspapers than elsewhere. By 1840, weekly circulation was higher in the 17 million inhabitant strong United States than in all of Europe with a population of 233 million. Most of these newspapers were local, carrying political news, business information and opinion – just like blogs and smaller online news sites do today. However, what emerged was that these smaller publications were driven out of business, on account of their inability to compete with newly created mass circulation newspapers. The publications reduced prices to a penny per copy and shifted content from politics and business to crime reports and human interest stories in pursuit of volume.

In just a few years industrialization of the newspaper business and mass-scale production had led to inflated barrier to entry costs for new players. When James Gordon Bennett founded the New York Herald in 1835, he invested $10.400 in today's money. Just five years later, in 1840, the necessary investment was twenty times greater; and by 1850 the amount needed to start a newspaper had jumped tenfold to the equivalent of $2.38 million[4] today. It took barely fifteen years for full commercialization of the press industry to complete.

A change to mass production, centralization, and a shift to more consumer-oriented content, together with a revenue model based on advertisement were the core elements. And these elements have characterized the blueprint model for news media or, more broadly speaking, how platforms for public opinion formation have operated since. According to media historians, such as Paul Starr and Yochai Benkler, firstly radio broadcasting, then the television and finally the newspaper business each employed comparable elements. Similar to the local newspapers in the 1840s, there were a variety of small amateur radio stations evolving around the time of the 1920 US elections. These stations were making use of a nascent radio transmission technology to reach a larger audience. By 1922, amateur radio stations were effectively shut down by the Secretary of Commerce, Herbert Hoover. He determined that amateur stations should be banished to frequencies with questionable sound quality and transmission[5] Consequently, amateur broadcasting fell victim in a similar manner to that which felled small-scale print journalism and the radio market became dominated by commercially run, advertisement funded stations – first for products, later also to political actors. Television followed a similar path, with cable and satellite networks aiming at the widest possible audience as a target for advertising.

US-Business models shape European public sphere

From the outset European networks followed a non-commercial direction. Here, instead of fully commercialized news media, the prevalent model is state-funded, regulated broadcasting. This is supposed to guarantee public discourse aligns with democratic values. As regulation of German newspaper wholesalers shows, certain rules were invented with positive affect even for commercial news providers. Notably, the US model of fully commercialized, advert orientated media increasingly circumvents the European infrastructure policy, and the safeguards it maintains. The digital channels of Google, Facebook and others are gaining an intractable foothold in public sphere. With digital channels the business model has dialed up the core business model of centralization to levels far and beyond radio and TV levels. With recommendation systems search engines as well as social media are being built to rely on the 'rich get richer' principle, or Matthew-effect, which

accords to the biblical gospel of Matthew 25:29 and attests: "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath.". Here, popularity breeds popularity. In this environment, success in terms of attention is often just a matter of initial luck, but also of clever marketing. An example for this is the YouTube channel 'PewDiePie' which garnered over 27 million subscribers and yearly ad-revenues of seven million dollars. 'PewDiePie' is not only one of the most popular sites on YouTube, but perhaps the most successful too[6]. As the example demonstrates, there are both plenty of incentives and opportunities for commercial actors to subvert media structures that were previously only perceived as distribution channels for amateur content output.

But as aforementioned the Internet is just a driver. It does not represent the full story. And it's certainly not the 'enemy'. Similarly as the Internet opens the door to media content which is produced according to the imperatives of the US-market, it has also re-enabled the production of similar small-scale and amateur-like communication platforms akin to early newspapers and radio stations of yesteryear. And just as with newspapers, radio and TV we must once again choose via explicit action or glide toward the future of this still developing media.

Regulation creates the open network

As with the older technologies, the evolution of the Internet is highly contingent on both market dynamics and rules of law. In 1955, the US Federal Communications Commission

(FCC) forced the telecom monopolist AT&T to allow devices from third parties to be attached to their lines on the basis of powers granted to the FCC by the 1934 Communications act. Because the telephone lines were regarded as "common carriers" (and thus had to be operated according to certain standards of non-discrimination and public interest), AT&T was obliged to allow third party applications to make use of their network. The first device to do so was the Carterfone (a device that allowed someone on a two-way- radio to talk to a person on the phone. In other words it delivered inter-operability). Carterfone did so by manually establishing a connection between the two

types of media. Secondly, The Hush-a-Phone – this device was a noise cancelling telephone designed to enhance sound-quality in a noisy place and to protect the privacy of the caller. The same verdict applied to fax machines, answering machines and finally to the 56k modems with which users established a connection to the Internet via analogues phone lines. In Germany, the then-monopolist Deutsche Post still claimed in the mid-90s that, in order connect to the internet, customers had to use the rather expensive and slow 56k modems supplied by Deutsche Post, and that selling and using other fabrications would be unlawful in Germany[7].

Picture: David Ausserhofer

Prof. Jeanette Hofmann. Honorary Professor of Internet Politics, University of the Arts, Berlin; Head of the Project Group "The Internet Policy Field", WZB Berlin Social Science Center; Director of the Alexander von Humboldt Institute for Internet and Society; Member of the German Parliament's Commission Internet and Digital Society (2010-2014).

"We should not set higher requirements for the networked public sphere than we did for traditional mass media. There is no such thing as a rule for political neutrality for newspapers or print magazines! Instead of seeing the Internet as a danger for the public sphere, we should take into account the trade-offs resulting from the availability of new services including user-generated content. Even if 'neutrality' of content cannot be guaranteed for one particular media channel, citizens have plenty of resources for information in general. However, diversity of content depends on the preservation of net neutrality."

"Diversity of content depends on the preservation of net neutrality."

Open networks, enabled by regulation: US telecom AT&T was forced to permit third party applications to connect into their networks in 1955. The historical court decision laid the grounds for the use of 56k modems by which users dialed into the Internet in the late 1990s

(source: sandman.com)

Without opening existing communication infrastructure to more devices and then other service-suppliers, 'the Internet' simply would not have happened. Thus, despite the term, a drive for 'openness' might be a matter for regulation and not of *laissez-faire* policy.[8]

Today, net neutrality rooted discussion once again look at whether or not commercial players should be granted the right to limit access to publicly used communication infrastructure. Proponents of net neutrality fear that even if telecoms are allowed to practice only positive discrimination (e.g. preferential and faster connection to some applications over others), the result would be similar to that of small-scale US newspapers in the nineteenth century or to amateur radio stations in the 1920s. Non-commercial services as well as new entries on the market would be unequipped to survive.

The problems with net neutrality

In the literal sense, net neutrality represents "the principle that all types of content and all senders and recipients of information are treated equally" [9]. This can be seen as both too narrow and too broad. Firstly, defining net neutrality as "the principle that all types of content and all senders and recipients of information are treated equally" could be seen as too broad, because as a proposal for a technical solution so called net neutrality doesn't follow at all from the arguments crafted by its supporters. An oft quoted line comes from internet pioneer Vincent Cerf who says: "allowing broadband carriers to control what people see and do online would fundamentally undermine the principles that have made the Internet such a success". Cerf does indeed point to a threat for the well-functioning of the Internet and the threat of single actors overly exerting power of opinion. But to limit power of opinion does not mean that treating all data by the same rules is either necessary or the best option. A simple instrument to prevent single actors from deliberately exerting total control over content is necessary. Setting rules which allow different treatment for various kinds of data would be tantamount to controlling the power of opinion.

Seeing net neutrality as "the principle that all types of content and all senders and recipients of information are treated equally" is also too narrow, because it focuses on the physical infrastructure of data transmission. It's too narrow as it discounts issues dealing with end user devices and services such as search engines and social media platforms. Diversity of content plus checks and balances are also needed to control influential stakeholders' power of opinion. One example which Rebecca MacKinnon uses in her book *Consent of the Networked* to illustrate this point is how 'non-neutrality' in terms of data transmission becomes of practical relevance in combination with 'non-neutrality' regarding content management on Facebook. For instance, if an ISP (read: a telecom provider) signs a deal with Facebook, then those subscribers who normally pay a standard data rate to browse the open Web will now gain free access to Facebook services (as is the status quo in many countries). Facebook's popularity and reach make it a far more attractive channel for many users to receive information via than by other competing media. Activists who seek to reach a large number of people will therefore need to go via Facebook. This, in turn, implies that they have to submit to the content management practices and other rules imposed by Facebook on its users. Far from being neutral, Facebook terms of service may also pose severe problems to people living in countries subject to political oppression. For instance, Facebook's rules demand that users register with their real name – something which a human rights activist in certain countries would rather not risk. The case in point being the recent example of the Saudi Arabian blogger Raif Badawi who was sentenced to 10 years in jail and 1,000 lashes punishment for starting a website as a forum for social and political debate. Using a pseudonym would not solve the problem given Facebook reserves arbitrary forced take down of content, according to its terms of service.

Other issues will arise from future technological developments. By 2020, mobile technology will further increase internet bandwidth and Internet traffic is estimated to reach one thousand times that of today using '5G', Fifth Generation Wireless Communications Systems. Cloud Computing will be widely in use. The greater part of online traffic will be made not by humans, but machines interconnected by a digital architecture of the' Internet of Things' (IoT) or 'Ubiquitous Computing'. Traffic and transportation management, human interaction in dense urban areas, advanced virtual office technology and environmental monitoring will further rely on the Internet. Filtering methods based on Artificial Intelligence (AI) will be widely employed to make use of the various types of data and to control automatic action within the network.[11]

Looking not only at the wires

The emerging picture only becomes clear after we connect the pieces of the policy jigsaw. Only then it becomes apparent which policy action is suitable to ensure the future infrastructure still meets our demands for democratic opinion formation. This broad approach represents a fresh take on the line adopted by policy-makers hitherto. Policy formation generally follows either existing judicial divides -such as the divide between telecommunication legislation and media policy - or technological distinctions.[12] The rationale to this being that, somewhat by design, the internet evolved to rely on different technical layers to function independently from each other. However for future success; which guarantees not only technological functionality but also the implementation of core democratic values, the principle of functional separation is not helpful. As Harvard law-professor Jonathan Zittrain *(The Future of the Internet – And How to Stop it, 2008)* states:

"Such modularity in stakeholder competence and purview was originally a useful and natural extension of the Internet's architecture. It meant that network experts did not have to be PC experts, and vice versa. But this division of responsibilities, which works so well for technical design, is crippling our ability to think through the trajectory of applied information technology"[13].

We should be prepared to abolish talking about 'the Internet' in a literal sense. At the level of policy making the notion of 'the Internet', with clearly defined endpoints and structural arrangements in between, has lost some usefulness. Cloud software allows for asynchronous code updates and conditions of use. Digital rights management offers linear restriction on the use, access and device controlled consumption of content, while search engines and social media platforms increasingly constitute part of our common public sphere.

The public sphere is no longer identical to mass media. Interactions on social media such as Facebook or Twitter have to be included into the domain of public communication. Moreover, the borders of the public sphere have somewhat disappeared – in the sense that it has become hard to tell which phenomena are important to count. Search engines certainly play an important role, and also viral movie content on YouTube or images and meme content via Twitter updates. Therefore, even content circulating at the periphery of the network can gain strategic importance, given how this content is often amplified by traditional media and their online counterparts.[14]

In China politically connoted art house-movies are distributed via P2P networks to avoid state censorship on services like YouTube?[15] Therefore, shouldn't peer-to-peer networks (and the software architecture that enables it) be regarded as a backbone of the public sphere? Should the European Court decide how users can approach Google to
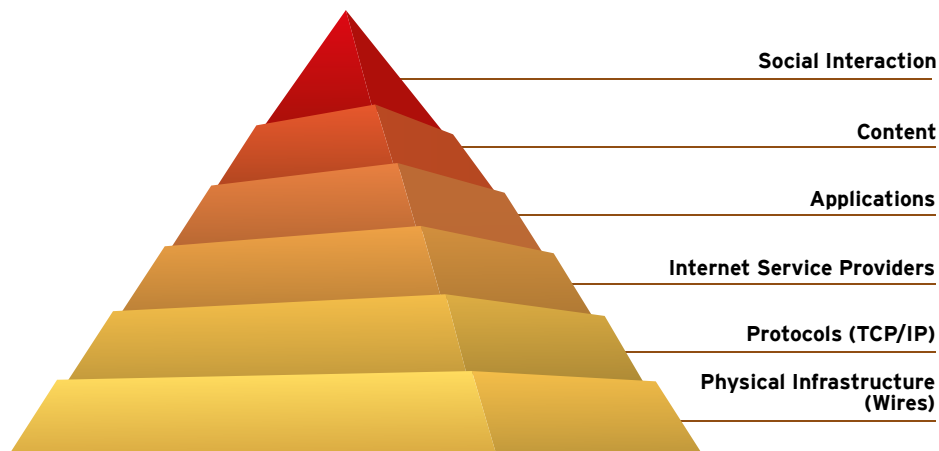
Picture: University of Hamburg

"We also need to further specify the legal concepts"

Prof. Dr. Marion Albers. Chair for Public Law, Information and Communication Law, Health Law and Theory of Law at Hamburg University.

"What once has been dealt with under the header of public opinion has practically dissolved. Clear borders such as those between broadcasting and the press are vanishing in times of media convergence. But the main problem is that public opinion can no longer be identified with mass media, as it had been in the past. Although it might seem, in retrospect, that the identification of public opinion with the mass media never was a really satisfying solution, it represented at least a starting point for political and legal discourses. Today, with social media, a clear distinction between mass media and individual media is no longer possible. When trying to grasp public opinion, we should not only look at the press and at TV and radio broadcasting, but also at search engines, social networks and structural functions such as the 'like' button. We also need to further specify the legal concepts that we have used before in order to regulate public opinion formation. Freedom of information, for instance, is an important element for the well-functioning of the networked public sphere. But we will have to spell out the exact meaning of this concept in much more detail than we have before. We previously only discussed how far availability and access of information are prerequisites for democratic opinion formation. In the age of a networked public sphere, where everyone can post information online, we will also have to look much more at how data is transformed into information and how information is prioritized."

delete compromising content which runs counter to that user's privacy – if so, does this constituent the public sphere? Where should one draw the line?

This report is meant to be one step in the direction of aligning the pieces of the puzzle. From various angles it will show how we can conceive of the public sphere in an era of digital technology, and will highlight the

policy criteria and technological endpoints that should be considered. The basis of this report accepts that political action may be necessary to ensure the underlying values of public communication platforms in Europe maintain policies that are tried and tested, and yet are not too narrow or too commercial tilted, but remain open for existing and as yet undefined forms of public discourse.

| Social Interaction |
| Content |
| Applications |
| Internet Service Providers |
| Protocols (TCP/IP) |
| Physical Infrastructure (Wires) |

What is often referred to as 'the Internet' equals a complex multi-layered interaction between technology, business models and software. The boundaries of which are almost impossible to define, given the Internet permeates so many aspects of everyday life. (Source: R. Grötker)

An Enabling Infrastructure for Public Communication

Let's start with a straightforward proposal: Online tools and services used for public communication should be regarded as *public infrastructure*. As such, they should become an object of licensing by government authorities. Taxi drivers for example, although by no means offering a public service, are obliged to carry each and every customer to any destination within the area defined by the local authorities and the taxi drivers' associations.

There are many examples of this in national law. *Common carrier*, for example, is a concept enshrined in US law. A common carrier is a service provided for the general public – like transport or telecommunications - under

license or remit from a regulatory body. In European countries, a similar concept is *public service*, which is mostly used in the context of communal infrastructure supply - like water supply, sewage management and electricity provision or telecommunication and state-owned broadcasting agencies. In France, the corresponding notion is *service public*; in Germany it's daseinsvorsorge.

There is a wide range of services for which one could claim meet the status of a *public infrastructure*. In our case, we are dealing with a *public communication infrastructure.* At least this is the focus implied by both the perspective of media politics and issues such as controlling the power of opinion.

"Public services", although still widely in use as, has historically been associated with the state-provision of (mostly communal) infrastructure services. I instead suggest

to speak of an *enabling infrastructure* . The term "enabling" leaves it explicitly open as to who acts as a supplier for a service – as long, as certain rules which are set by public authorities are obeyed.

An historical association communal state provision of infrastructure services means public services ought to be thought of as an enabling infrastructure. The term 'enabling' leaves it implied as to who acts as service supplier, just so long as certain public authority rules are obeyed.[16]

What should an enabling infrastructure for public communication resemble? The answer is simple: it should guarantee the integrity and well-functioning of public sphere. And what are the crucial elements that require consideration when aiming for a well-functioning public sphere?
Today's public sphere is mostly a networked public sphere. Any definition of the public sphere should be broad enough to accommodate not only traditional mass media, but also social media and other forms of communication which rely on peer-to-peer

content production and sharing.[17] This is not just a matter of definition. Normative issues also play an important role. This task may be expressed as follows:

> *"[To translate] the principles of fairness and due process that have been the subject of analysis for liberal democracies into a new space where private parties and groups come together with varying degrees of hierarchy to try to solve the problems they find in the digital space."* *(Zittrain (174.):*

Following a proposal of Harvard Law professor and Berkman Center for Internet & Society Director Yochai Benkler *(The Wealth of Networks, 2007)*, I want to put forward the notion of a 'public communication platform'. Although being somewhat vague, the term 'platform' serves as a useful umbrella to include instances of traditional mass media, like newspapers on the one hand and digital communication services such as Facebook or Twitter on the other. Even a parliament could be described as a platform. The underlying assumption of this conceptual move is that
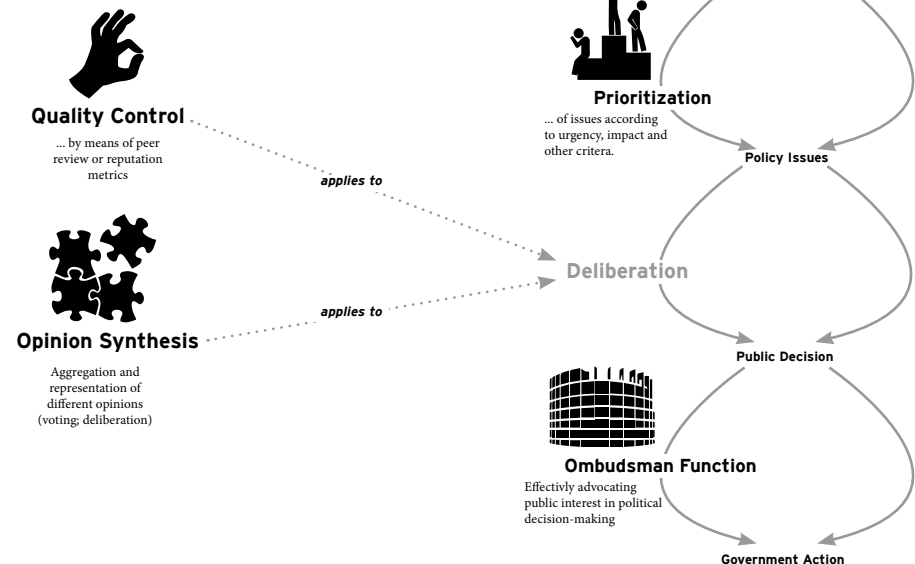
newspapers, communication services and parliaments share essential features. Firstly, they all relate to the public sphere. Each one shares essential structural similarities. Regardless of platform the very same design dimensions are relevant for securing the upkeep of a public communication platform in respect to its contribution to a well-functioning public sphere.

The five design dimensions listed below (see diagram) can be used to assess the operation of single communication platforms. They are a starting point for a set of critical questions. Furthermore, the design dimensions serve as a reference point when evaluating the

networked public sphere as a whole or clusters of communication platforms. Looking at clusters might be useful because weaknesses of one platform can be compensated by strengths of other related platforms.

I want to distinguish five design dimensions which are relevant for the well-functioning of a networked public sphere:

• Intake
• Prioritization
• Quality Control
• Opinion Synthesis
• Ombudsman Function[18]

The five critical design dimensions for the networked public sphere and how they are localized within the process of public opinion formation. Parameter-setting in each dimension will have an impact on how well the networked public sphere can perform ch the values of Freedom of Expression, Public Participation, Liberalism, Privacy, and Public Rationality (see Appendix).

Illustrations by Irene Trautluft, Gerald Wildmoser, Icons8, Liesl Kruger and Juan Pablo Bravo from the Noun Project

Quality Control
... by means of peer review or reputation metrics

Opinion Synthesis
Aggregation and representation of different opinions (voting; deliberation)

applies to

applies to

Deliberation

Start: Private communication becomes public communication

Intake
... from all constituents (as far as of concern for public action).

Awareness

Prioritization
... of issues according to urgency, impact and other critera.

Policy Issues

Public Decision

Ombudsman Function
Effectively advocating public interest in political decision-making

Government Action

The many threats to neutrality

Net neutrality revisited

The five design dimensions method helps to formulate critical questions in regard to net neutrality and other policy issues. Regarding platform functionality, net neutrality touches upon intake because the availability of content and media services directly influences which issues can be furthered. As a consequence, it also has an impact on how much attention there is from public authorities (assuming that a reduced availability of information makes that information less relevant from the point of view of public authorities).

The main controversy around net neutrality is whether or not Internet Service Providers (ISPs) should charge fees to content carriers – like Google or Facebook - who are using their wires or whether ISPs should prioritize content delivery to end consumers. Proponents of net neutrality hold that only non-discriminatory treatment of content by

ISPs will ensure the well-functioning of the public sphere in the Internet and preserve the social (as opposed to commercial) character of the net[19]. Opponents of net neutrality claim that prioritization of some content (e.g. movie streaming, a la the deal signed between Netflix and ISP Comcast in the U.S.) will benefit many consumers and by no means constitutes a threat to the functioning of a networked public sphere.

Defining the necessary kind of universality or non-discrimination in order to secure net neutrality isn't a simple task. As recent debates indicate, there are plenty of reasons to deviate from all too strict net neutrality, starting with technological issues relating to network management.[20] The difficulty with public sphere infrastructure lies in assessing which form of deviation from strict neutrality could harm the operation of the Internet as a public communication platform.

An obvious gripe could be a stuttering movie stream caused by network congestion.

Of course, the creation of specialist services for streaming of videos or telemedicine applications might be an easy solution to this type of problem. However, these specialist services would come with a tradeoff. For all the improvements in audio and streaming quality, there might be a decline in choice of content. This could lead to a significant change within the digital public sphere. As for other options… it could turn out that it is technologically possible to improve the transmission of all video content within the traditional Internet, without adverse effect on the wider content delivery. In other words; it could well be the case that neutrality of information consumption enables more solutions than infrastructure neutrality.

In another example Deutsche Telekom offers priority access to the music streaming service Spotify to its mobile clients. Although contracts for mobile clients define a set data volume which is included in the monthly rate, data transfer via Spotify is unmetered. The central question is this: does positive discrimination for Spotify music streams represent a threat to the well-functioning of the public sphere? It's merely music streaming, entertainment and of little political relevance one might argue. Yet several counter claims are possible:

Firstly, competition in terms of attention exists between media and various kinds of content. Take Twitter which competes for time otherwise reserved for reading a daily newspaper. Therefore, it follows that positive discrimination of Spotify could have the effect that other sources of information are used less frequently.

Secondly, music (and movies) are not 'just entertainment'. Protests against the Anti-Counterfeiting Trade Agreement ACTA have been amplified by virally shared music videos on YouTube[21]. We don't yet know the types of political campaigning that will rely on audio (or video) content in the future. As mentioned before, in China art-house movies with a political connotation are distributed via P2P networks, thus avoiding censorship which would otherwise be technically challenging if the exchange of videos relied upon an ISP[22]. But the vast data uploads needed by P2P networks could become a problem (and indeed are a problem) should ISPs need to throttle uploads for a particular reason.

Unquestionably discrimination of audio (and video) content of a particular kind *could* lead to a suppression of information which is of high relevance for public opinion formation. Suppression of content of a certain kind is more likely to happen in a situation where there is only one provider with quasi-monopolistic power on the market. Positive discrimination of a single provider like Spotify by a leading ISP like Deutsche Telekom could create a quasi-monopoly. Though, it's not as clear cut to say that positive discrimination of Spotify *actually* threatens the well-functioning of the public sphere. There are too many hypothetical assumptions involved. But one can still argue that due to the innovation-driven network-economy, market settings should not run roughshod over political campaigning and public opinion formation.

Furthermore, the principle of *universal access* should apply. If risks to public sphere cannot be precluded, then universal access should be the adequate default response.[23]

Viewing net neutrality within the wider context of intake and *universal access* mirrors a shift in the way problems are approached. Net neutrality is a policy proposal, framed exclusively in technical terms. Debates about net neutrality are often debates about technical, economic and legal detail concerning potential outcomes of net neutrality. *Universal access*, on the other hand, is one out of several possible pertinent rationales when arguing for net neutrality. Debates about *universal access* will center on the desired outcome (the well-functioning of a networked public sphere), taking into consideration the different options available to achieve this, with net neutrality being one of these options. Establishing municipal networks or community broadband, as proposed by Harvard technology expert Susan Crawford, is one option that addresses net neutrality on a technical level.[24]

Picture: Valerie Bennett

"One problem is the high degree of intercon-nectedness of issues"

John Palmesino, Territorial Agency, London

"Net neutrality makes me think about the way a battlefield is dealt with by law. It's about a territory, governed by complex legal structures that are being settled by conflicting parties. Consider for instance how the notion of neutrality is evoked in the discussion about drone warfare! Here, we see also how the notion of a territory is extended, from a concrete spatial affair to a more abstract notion. Today, even states are not defined by spatial borders, but by sets of negotiations. In my view, the biggest challenge is that these territories are in many cases no longer homogenous spaces, but rather exhibit network features. We still have to seek ways to govern such networks. One problem is the high degree of interconnectedness of issues. When the Secretary of State for Culture and Media in David Cameron's cabinet, for instance, announced plans to make roaming between providers for cell phone communication mandatory within the UK, to enable better access to mobile communication for much of the rural population, he encountered a huge wave of protest from the Home Secretary Theresa May. Roaming, so the argument goes, would make surveillance of terrorists by lawful interception too difficult. In my view, that's an amazing way of thinking: that to be able to monitor people suspected of terrorism in the city, the whole rural population must make severe concessions!"

Fighting Fragmentation

Net neutrality is one option to operationalize *universal access* and find a solution for the design dimension of intake. Forecasts for the Internet beyond 2020 claim almost unanimously that in the near future, today's 'Internet' will represent one out of many networks, with the greater part of them privately owned[25]. In this scenario, net neutrality regulation created today would subsequently apply to 'old internet' and would be severely reduced in impact.

The wider context of this phenomenon is the trend towards fragmentation. (For the parallel trend towards convergence, see below). Fragmentation mostly concerns networks and devices. The demand for higher bandwidth will lead invariably to the construction of networks which run parallel to what we now conceive of as 'the Internet'. Networks of this kind are known as VPNs – Virtual Private Networks. Take the rising need for mobile data transmission - part of device-to-device communication architectures of the Internet of Things - and these data transfers are already established by technological means, governed by separate legal and organizational rules to landline internet connections. It is also conceivable that providers start to offer new landline connection systems in addition to 'the Internet'. Google Fiber, which promises connectivity up to 100 faster than today's average broadband speed, is already operating in some areas of the US. A further reason besides speed for the adoption of separate and more gated networks might be concerns for improved security and privacy.

Another dimension of fragmentation concerns the devices with which users connect to the network (device neutrality). Today the personal computer is still widely employed as an all-purpose machine. The same screen is used for document editing, accounting, personal communication, social media networking, playing games, reading and watching videos whether business or pleasure. But as all manner of unwired devices connect to the Internet, it may be the case that consumers adopt tailored more specialized tools and applications. The widespread use of the tablet or the iPad and of e-book readers for the purpose of online-reading is a first move in that direction. Most of these devices are by no means neutral, as the example of Amazon's e-book reader *Kindle* shows. The Kindle restricts books to the Kindle format and offers them via the proprietary Amazon online store. And on the mobile market lack of device neutrality renders the Windows phone defunct for many services given how developers create apps for iPhone or Android devices before Windows mobile devices.

Jonathan Zittrain, who has coined the term 'appliancization', takes this last point a step further. Zittrain fears the pre-packed all-purpose Internet with its silos of different and functionally specific applications, each representing an intentional step to restrict the freedom of users and amateur technicians from tinkering with Internet technology. The trend of software companies to sell cloud-based software-as-a-service instead of delivering the full software code to the users' computers is a point in case. Appliancization, according to Zittrain, prevents innovation and destroys the open or generative character of the Internet which is beneficial not only in terms of business opportunities, but also to social innovation and the establishment of societal ties that should be regarded as value in and of itself.[26] Following this line of thinking, generativity should be counted as a critical element in order to establish democratic participation.

Other observers applaud the apparent breaking-up of the internet into a set of smaller networks, such as Clyde Wayne Crews of the Cato Institute. He prefers to speak about splintering instead of fragmentation:

> *"To escape the regulation trap of the commons, the Internet should splinter and go private. One Internet is probably not enough. Instead, owned Internets-proprietary "Splinternets" where prespecified ground rules regarding privacy and other governance issues replace regulation and central planning may be superior. What matters most is not necessarily the Internet as it exists today, but Internet technology.[27]"*

Whether or not the Internet will splinter or become the victim of 'appliancization' is a matter which politics alone will tackle. But politics are able to set the rules and to fund infrastructure (such as municipal broadband) which could ensure *universal access* in a broad sense. One issue of particular importance in terms of rule-setting is data portability.

DATA PORTABILITY

Data portability means that users of social media can move their data - identity, profile, pictures, movies and other data - from one platform to another as was previously the case with social bookmarking-platforms.[28] In terms of policy, data portability is associated with a regulation or a voluntary self-commitment which requires social media-providers to make data portability (or data export) possible for their users.

As of today, most social media such as Facebook, LinkedIn, Google+ or Xing do not offer data portability. A disadvantage of this is that users become 'tied' to an application with no provision to reach out to users of other networks, nor can they easily quit a network, because by doing so they would lose previously established connections and content ('lock-in problem'). With data portability, users would be better placed to choose which social medium suits their best interest, thus enhancing competition between social media providers. Hence, data portability could contribute to the well-functioning of public sphere communication platforms by making social media more responsive to the needs of their users. Equally data portability is necessary for protecting the privacy and integrity of communication – assuming that integrity is violated if communication contents are under the exclusive control of a private company.

Dealing with Media Convergence

Diversity of content is another issue within the range of so-called neutrality. As with data fragmentation, it mostly concerns the intake dimension of the public sphere.

Securing diversity has traditionally been an issue for media politics and a task of national governments. Policy measures to secure diversity range from licensing rules for media and content distributors such as newspaper wholesalers to publicly funded content production, as for instance the UK does with the BBC. In many cases, securing diversity is understood not only as an approach to achieve diversity of opinion, but also diversity of media formats, including especially those formats which are intellectually demanding or artistically advanced and that might not be able to survive under market conditions.

Recently, securing diversity has become a topic of debate in connection with media convergence (also discussed under the header of cross-media integration).[29] With the emergence of Internet radio the programs produced by state-owned radio stations have become increasingly indistinguishable from other audio content on the internet. The same happens with TV. Online libraries of public broadcasting stations and on-demand TV services provided by the telecoms -making it possible to 'pause' and 'play back' a live broadcast just like a video - are ostensibly playing in the same arena as streaming services such as Netflix. Media convergence of this kind poses a problem for media funding practices of many national governments. Whereas in the past it was easy to draw a line between public service broadcasting, privately run radio and TV programs and publishing companies, now the line is becoming undisguisable. With media content produced by public service broadcasting going online, it becomes increasingly difficult to maintain that publicly funded media production is not a violation of competition law, because it competes directly with commercially-produced content.

Another kind of convergence is the convergence (or concentration) not of media channels, but of marketplaces and companies, as is the case with the growing oligopolies of Amazon, Google et al. Oligopolies of this kind lead to exclusive power in both pricing and mindshare. A related phenomenon is the acquisition of old-style media by successful entrepreneurs of the digital economy. Examples for this are Amazon-founder Jeff Bezos's acquisition of the Washington Post, Facebook Co-founder Chris Hughes' purchase of the The New Republic (which he sold again in 2014) or Ebay-Founder Pierre Omidyar's media company First Look.[30]

Usually, convergence of markets and companies is treated as an antitrust-issue, but one could levy criticism based on the lack of diversity exacerbated by convergence. (See below: "Controlling the Power of Opinion".) In literal terms, convergence seems to contrast the parallel trend of fragmentation. But although convergence and fragmentation might indicate opposing trends in some areas, it is more useful to understand the two notions as expressions of one and the same normative concern. Both fragmentation and convergence address the issue of securing diversity. Only the mechanism by which diversity is aimed to be achieved is differently in each case. In respect to fragmentation, policy makers might be concerned to avoid the splitting of 'the Internet' into a variety of different networks. The concern is that network infrastructure providers would then be in the position to discriminate against certain content, and discrimination occurring in single networks will lead to a critical loss of diversity in the networked public sphere as whole. In terms of policy making, these effects could be counterbalanced either by public funding for municipal broadband services or by rule-setting for ISPs and content providers. So far the most effective media convergence instrument has been to proactively secure diversity by state-funding of certain media content.

Remember the final goal of this line of action should not be adherence to the status quo which consists, mainly, of a certain pattern of funding allocation for media organizations. Rather the well-functioning of the public sphere is the overarching aim. Conversely one could also argue that some parts of the resources which are spent on public service broadcasting today should be re-allocated to other areas to facilitate diversity in terms of quality content. Such means could, for instance, be forms of public participation.

Empowering Public Participation

Empowering public participation is an important feature for the entire spectrum of communication platform design functions. To start with, participation is necessary to ensure sufficient intake. Participation can also be useful within the process of filtering ideas and topics for political relevance, and in the process of quality control. Furthermore, it relates closely to the issue of attention from public authorities. It is often easier to gain attention for issues which have a great number of participating supporters. Likewise, attention from public authorities itself often takes the form of public consultations, thus calling for direct participation.

There are many ways to enable public participation. Here, I will highlight to two options which are of particular interest. These two options show how starting with design-dimensions for public communication platforms can lead to the discovery of issues which otherwise would be neglected when focusing purely on mass media.

SUPPORTING DELIBERATIVE QUALITY

When dealing with measures to proactively secure diversity, authorities often interpret diversity in terms of quality. Public service radio and TV not only deliver diverse content, but also quality content. In a networked public sphere, quality should be defined not just in terms of intellectual or artistic quality of works, but also in terms of quality of communicative interaction. For the purposes of democratic opinion formation, the most important dimension of quality in this area is deliberative quality. Deliberative quality can mean all important issues are considered, with the strongest arguments for and against

each idea are captured, allowing people to distinguish good arguments from poor arguments[31]. It's plausible that in time we will abandon the idea of public funding of media content being bound to a specific medium. Instead we could start thinking about how public funding can be applied and legitimized for a wider range of digital content in order to enable high-quality e-participation and public sector innovation for the improvement of deliberative quality. In such a situation, enabling of deliberative quality could become one standard for selecting content worthy of public funding. First steps in this context are new approaches to measure quality in online deliberation.[32]

CAPACITY BUILDING FOR INFORMED DECISION-MAKING

An approach in a similar vein would be to support measures for informed decision-making in the context of public consultations for new regulations or other issues of concern to the wider public, such as health policy. An example is a project which centered on informed decision-making on ethical issues around non-invasive prenatal testing. It aimed to understand the preferences *after* people had been confronted with the main arguments and points of information[33]. In particular, capacity-building of this kind would address end-users and non-industry stakeholders. The aim would be to enable these participants to engage meaningfully in a consultation process which, because of the high barriers to entry in terms of background knowledge, would otherwise only be accessible to professional stakeholders. Public consultations of this kind have previously been organized as public events under the

header of 'deliberative democracy'. But efforts are already undertaken to build tools and procedures for capacity building around informed decision-making in the digital realm[34]. Investing in these kinds of efforts may be a valuable option from the perspective of policies scoped to provide an enabling infrastructure for a networked public sphere.

Controlling the Power of Opinion

Growing oligopolies of companies such as Amazon, Google and others raise concerns about possible abuse of power. This, too, can be a threat to neutrality, as abuse of power can influence the prioritization of issues on the agenda.

One policy option often discussed in

this context is the reliance on antitrust legislation in order to limit corporate power of opinion. Another option would be the development of public service search engines (and public social media) in order to counterbalance corporate powers. A third possibility is to force content service providers (such as search engines or social media platforms) into regulations which create limits to legitimize content management. A separate, often neglected issue is how 'Big Data' produced by the likes of social media can be used, not only by social media platforms themselves, but also by third parties, for the targeted manipulation of public opinion, or otherwise.

ANTITRUST LEGISLATION

In November 2014, the EU parliament voted through a resolution on supporting consumer rights in the digital single market. The resolution asked the EU commission to act in regard to applying existing antitrust legislation to Internet search engines. It stresses not only the rights of "vulnerable consumers", but also the "competitiveness of the European economy" and the "political, social and cultural life of EU consumers and citizens"[35]. This example demonstrates how antitrust legislation can be applied for other goals than purely economic objectives.

The objectives of antitrust may also be pursued using other branches of law. For instance, extending the copyright laws of content creators to prevent a total buyout of these rights by intermediaries like Amazon could taper their quasi-monopolistic power. Currently Amazon can demand exclusivity of distribution rights via the Amazon books on-demand service for titles sold by the digital store. A change in copyright law could interfere with this practice, if the market power of Amazon becomes too dominant.

CONTENT MANAGEMENT

A widely discussed topic under the heading of 'controlling the power of opinion' is whether or not it is suitable to put regulatory limits on the actions which search engine and social media platforms can perform in regard to content management. One reason for this is that search and social media platforms are increasingly becoming all important for the selection and delivery of news content. Pew Center research conducted in 2011 reported that, circa 11% of US digital news

consumers described themselves as receiving their news via Facebook or Twitter. In 2014, the comparative report stated that 30% of respondents said they accessed news exclusively from Facebook. That is a very rapid rate of migration in just two years.[36]

Although certain forms of content management are widely regarded as unproblematic – like spam deletion or child-pornographic filters - others are debatable. Content management can easily interfere with legitimate demands for neutrality. Such neutrality demands might be based on the principle of free speech or an expectation that search engines do not, by way of content management, engage in political campaigns. Violation of these demands for neutrality can also happen if blocking is initiated by users (for example via a 'flag for removal' function of the kind provided by YouTube to let users filter out content that might be deemed to promote terrorism)[37].

In the past year significant violations of neutrality were reported when Facebook initiated a new policy in March of 2014. According to the new policy, organizations that use Facebook as a promotional tool are enticed to pay for posts which are then visible to a larger audience of followers. Without payment, only a small portion of the organization's followers would receive post updates. One effect of the new policy was that NGOs and other non-commercial organizations with a large number of followers on Facebook experienced a drop in outreach. Prior to the policy introduction Facebook posts from the blog *ValleyWAG* would typically have reached about 1,000

followers. Instead, under the new policy, only 79 followers received notifications about new ValleyWAG content on Facebook[38]. However even without intentional violations of neutrality, filtering algorithms can still be regarded as causing undue discrimination. As sociologist Zeynep Tufekci noted after the riots in Ferguson that while many news items were being posted to Facebook, she initially saw none of them in her feed, save for a deluge of ice bucket challenge posts – which, in her view, represented a violation of net neutrality[39]. Thus relying on one's Facebook, Twitter, Instagram or similar online reputation for one's public outreach could be construed as akin to building a house on rented land. Meaning your investment and asset is neither yours, or in your control. We would hardly do this in the offline world. Strangely, in the online sphere this has become a common procedure where ownership and control are willingly acquiesced.

Possible concerns not only relate to the specific kind of content which search engines and social media platforms should or should not block (or prioritize). But also the way filtering mechanisms and voting options (Facebook's 'Like') are designed and implemented. Commercial content services are in such position as information providers that they could *possibly* interfere with public opinion formation and this might prove problematic – regardless of the specific content which is blocked (or prioritized). Emily Bell, Director of the Tow Center for Digital Journalism at Columbia University's Graduate School of Journalism, writes:

"Transparency and accountability have to accompany the vast, important role our key information providers now play in society. It is understandable why platforms such as Facebook strenuously resist being labelled as publishers, but it is no longer realistic. It takes very little narrative imagination to grasp the ethical complexities ahead; every policeman wearing a camera, every terror cell with a Twitter feed, every face in a crowd rendered recognizable."[40]

One small step towards more transparency and accountability is taken by indexoncensorship.org, where users can report cases where posts in social media were unduly removed by moderators. Other approaches to the problem of policing content management practices include the self-regulation of the industry, as initiated by the Global Network Initiative[41].

PRIVACY

One sub-issue in the field of content-management is privacy. Currently users face difficulties deleting content which they have posted to social media. One technological solution for this would be simple tools to allow users to set preferences about how one's own photographs and alike ought to be reproduced. The Creative Commons license and the robots.txt standard (that directs search engine spiders which pages to crawl and which to index) are example approaches to similar situations. Another technical solution could be applications that delete one's digital footprint and which adjust the defaults settings in such a way that users actively employ these apps. Respective technologies

are already on the market. Examples for this are *Tiger Text, XPire,* or *Tweetdelete.* But, as digital media scholar Jeffrey Rosen remarks,

> *"Unless Facebook builds XPire-like apps into its platform - in a sense, making it a default option that people can easily access - the chance of citizens opting-on on a broad scale seems low, and therefore disappearing data will not, in practice, become a norm."* [42]

There are also many debates as to whether not only users' privacy, but also privacy rights of people who are mentioned or reported on by social media are violated. Above all this include violations of privacy through user-generated content and 'peer surveillance'[43].

Examples for this are the widely documented YouTube clips entitled "Angry Teacher" and "Hong Kong Bus Uncle", which represent instances of public shaming and ridiculing of socially unacceptable behavior. Also, the 'right to be forgotten' (as in the European Court ruling in *Google vs Costeja* in 2014, relying on the Data Protection Directive from 1995, Art. 12) belongs to this topic.[44]

SEARCH AS PUBLIC SERVICE

An alternative check on search engines and social media platforms would be to build public service alternatives that mirror existing commercial services. And yet despite its cost and demanding commitment, the idea is not without supporters.[45]

Picture: Alexander Janetzko

"The public's right to be informed has to be balanced more evenly"

Matthias Spielkamp, Partner at iRights.lab; Editor at iRights. info; board member of Reporter ohne Grenzen (Reporters without Borders)

"With its opinion in Google vs Costeja in 2014, the European Court of Justice has made a clear decision concerning the shape of the public sphere - as have German and Spanish regulators in allowing publishing companies to prohibit Google the use of excerpts or "snippets" from their texts in the display of search results. But the new 'right to be forgotten' is a highly misleading notion. Should forgetting be reduced to being 'de-linked on Google'? Also, in my opinion, the court has gone too far in not only mandating Google to de-link, but also granting Google the option to deny content creators explicit notification about their de-linked content. Thus, information which the public might have a legitimate interest in is no longer available on search engines. The public's right to be informed has to be balanced more evenly with the protection of privacy in these cases."

Picture: Max-Planck-Institute for Informatics

"If one would guarantee privacy by 'crypto-graphic anonymi-zation', each interaction would be ten times more expensive"

Prof. Gerhard Weikum, Research Director at the Max-Planck-Institute for Informatics in Saarbruecken

"We cannot dictate that commercial providers of information infrastructure give fair and equal treatment to all kinds of data. At least with such limitations, the provision of information infrastructure would not be a particularly attractive business. In my view, providing an infrastructure based on principles of equality a task for the state, like that of public service broadcasting. Likewise regarding the provision of content services, we should sincerely think about establishing a public service search engine, a public service social media solution or a public service cloud-provider! Thought it's technically feasible, costly and difficult to compete with Google, this should not rule it out. It's by chance that Google gained market dominance – not because their product cannot be challenged. There were other search engines before Google, like Alta Vista, which had a much better coverage than Google in its early days. The only thing that Google did better was to present results from very simple searches at the top of the page as a list of results. Also, Google was better in monetizing their search services through pay-per-click adverts. That's how they managed to grow. Whether or not a public service search engine could do without tracking its users, I don't know. If one would guarantee privacy by 'cryptographic anonymization', each interaction would be ten times more expensive in terms of transaction costs. This would put a tremendous stress on the whole network. Also, it could be difficult to design online services which are attractive from the user's point of view if the possibility of learning through repeated interaction, which is only possible through tracking, is barred. Better solutions for reconciling privacy with high user convenience are called for. This is the subject of ongoing research."

BIG DATA & TARGETED MANIPULATION OF PUBLIC OPINION

A widely neglected topic within the area of controlling the power of opinion concerns the use of Big Data and filtering based on Artificial Intelligence and other methods. Big Data is an issue in the context of the public sphere (and a neutrality issue) because public communication platforms. It's especially prominent in social media, where a large swathe of highly relevant data is collected. Social media produced Big Data also creates unprecedented opportunities to influence

users and citizens on the basis of the results of data analysis. Such tools can be used for sentiment analysis and to estimate the ideological content of short text passages, thus allowing personal traits of people engaging in verbal interaction in a great variety of different settings to be filtered out. Additionally, network analysis offers valuable insights into the relational properties of individual users, as well of user communities and clusters, making it possible to identify highly influential persons within the network.

A further step is the modelling of individual behavior with the help of Big Data. As recent research has shown, a user's Facebook 'Likes' (which are publicly accessible) give sufficient clues to important personal traits. Using models for automated prediction, a trait like sexual orientation could be estimated with a certainty of 88 percent, race with 95 percent certainty, and political orientation with 85 percent certainty.[46]

As the US election of 2012 has shown, knowledge gained through Big Data analysis and the modelling of individual behavior can easily be used for the purposes of voter targeting. As studies by political scientists have shown, there was a remarkable shift within campaign and media content from 'grant narratives' and expert opinion towards a deliberate effort, aided by insights of behavioral science, to alter the behavior of individual voters who were of strategic importance in swing districts.[47]

Picture: University of Basel

"Big Data is undermining European laws for data protection and privacy"

Prof. Dr. Beat Rudin, Data Protection Officer of the Canton Basel-Stadt, Switzerland and Titular Professor for Data Protection Law and Freedom of Information at Basel University

"Big Data is undermining European laws for data protection and privacy. Our current legislation is based on the idea that violations of privacy happen only when personal data referring to an individual person is being used or displayed without the consent of that individual or within circumstances not foreseen by that individual when consenting to the use of their data. Big Data, on the other hand, makes it possible to use anonymized personal data or mere statistical data in order to draw inferences regarding individual behavior. Data protection has no means of dealing with problems arising in this context. Furthermore, the availability of huge masses of personal data across different fields makes it technically possible to easily re-personalize data even if these have already been anonymized. Law which is designed to deal with the impact of technology naturally has to lag behind the technological progress. We should do what is in our power in order to tame technology with adequate rules and effective instruments. Otherwise privacy, which is of existential importance for state, society and economy, will be harmed irreparably."

Picture: Private

"I am afraid that the effect would also be an unfair dis-crimination"

Ralf Bendrath, Political Scientist, Senior Policy Adviser to MEP Jan Philipp Albrecht

"The African-American Civil Rights activist Rosa Parks became famous in 1955 by refusing to obey a bus driver's order to give up her seat in the black section to a white passenger. The incident resulted in the famous Montgomery bus boycott, and Parks herself became an international icon of resistance to racial segregation. Looking at this incident in today's light, the aspect which is most striking is Parks' high degree of connectedness. At the time of the bus incident, Park was secretary of the Montgomery chapter of the National Association for the Advancement of Colored People, and she had attended a training center for worker's rights and racial equality. I wonder if today, a transportation company which became aware of this high degree of connectedness (maybe by looking up the person's Facebook profile) wouldn't have decided to make concessions in such a situation. By itself, that could be a good thing. But I am afraid that the effect would also be an unfair discrimination of people by the degree of connectedness."

Theoretically, not only political campaigners, but social media platforms themselves could decide to target voters of a political party for whatever reason. A recent study published in Nature showed how 'go vote' messages that were initiated by the company Facebook but disseminated by users within their Facebook networks, resulted in a statistically higher voter turnout among the target group, compared to a 'go vote' message not embedded in social ties[48]. This observation suggests that a platform could easily manipulate election results by simply targeting those voters most likely to support a preferred candidate. So far, there is no law which would deter a social media platform from engaging in that sort of behavior.

Overarching Issues

In many of the issues reported so far, there are some questions and problems of more general scope which are repeatedly discussed. One of these problems is the establishment of a legal framework for binding rules within an international market. Another issue concerns the limits of economic policy, which so far has been the EU's main way of acting. A third issue that I want to raise is the necessity of better coordination for policies dealing with the networked public sphere.

Shaping international law

Assessing the entire range of approaches to regulations that put limits on the various ways search engines and social media platforms pose a threat to the well-functioning of the networked public sphere is such that, the sole

actor that can impose such regulations is the EU. Only the EU is in a position to establish new principles of international business law. Examples for this from the past are the EU Court of Justice's decision to make language and territorial accessibility of content (instead of a company's headquarter location) the criterion for choosing the relevant legal framework in *Google vs Costeja* case in 2014. Another example is the EU's planned *General Data Protection Regulation* which proposes to re-draw legal borders by replacing the former 'territorial principle' by a 'targeting principle'. According to the proposal a company, with its products and services, targeting a market for customers within the EU, must also comply with the EU's legal standards, regard-less of the company's physical location.[49]

The Market is not enough

In the context of net neutrality the argument is often that market competition is sufficient to ensure all relevant services and contents for the well-functioning of the public sphere will be market led, because of the demand for services and contents. Reference to competition on the market, though, neglects some particular features of the networked public sphere. It's not easy for customers to switch providers in a networked economy, because the value of a network service (like social media) depends on the number of connections and co-users which already are members of that network. Secondly, beyond individual consumer benefits, network structures represent public as well as social goods. With public goods (or 'commons') the majority of users are better off if these goods are universally available, but as individuals, group members do not have sufficient

incentives to make personal investment to avail these goods. However social goods represent values such as relationships or social coherence, and these do not translate easily in terms of prices for applicable services on the open market.[50]

A third reason to be skeptical towards the power of the market is that, under some circumstances, the interests of minorities are very unlikely to be catered for purely by the market economy. If broadcasting services (or other branches of content media) are reliant on advertisement revenues to finance content production, then there is little incentive for broadcasters to sell media content to a small and, from an advertiser's point of view, not particularly attractive audience. Competition among broadcasters starts to serve smaller preference clusters only if a rather large number of channels are already available on the market. Simple models show that for this reason, niche markets in the media systematically are underrepresented even in terms proportionality, meaning that niche customers are being offered fewer products than they should in respect to the mere size of the group[51]. One practical example for this is the case of Iceland where the country's population is simply too small for big media companies to consider making translations or to localize marketing. For these reasons, proactively secured diversity as well as regulations ensuring universal access should remain valid options.

Institutionalized Monitoring & Coordination

As this report has shown, policy issues relating to the networked public sphere are highly interconnected in terms of practicality, but rather disconnected in regard to legal and technological handling, which is dispersed amongst a variety of separate fields. Therefore, the coordination of efforts to secure the well-functioning of the networked public sphere would be a very useful endeavor.

One proposal which has already been voiced in various contexts (such as in the report 'Internet and Digital Society') by the German parliament's *Enquete Commission on Internet and Digital Society*[52] is the establishment of a permanent task force

for the networked public sphere (similar to the long-standing Federal Communication Commission in the U.S. which was created by the Communications Act in 1934 and granted the jurisdiction to enact executive powers in cases of complaints from citizens). As to whether such a taskforce should ideally be created from scratch or borne out of one the existing organizations such as BEREC or the Global Internet Policy Observatory is an open question. Another option would be to bolster the coordination of departmental research and research within the EU's Horizon 2020 program to gain a better empirical understanding of the requirements for the well-functioning of a networked public sphere and suitable policy options.[53]
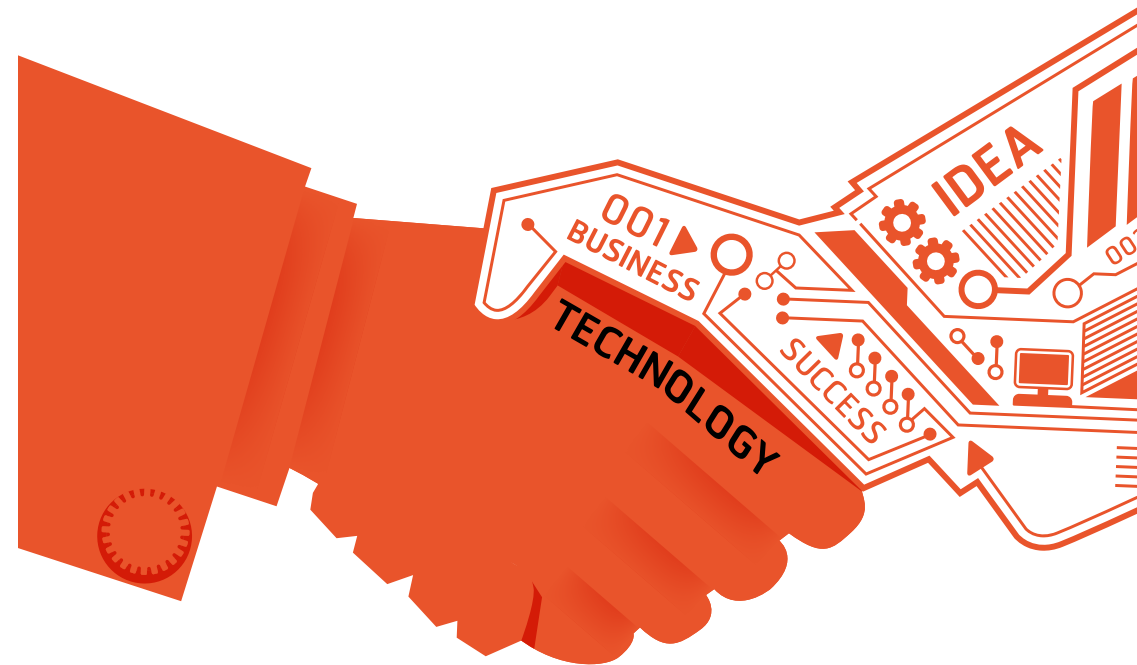
(source: Istockphoto/Getty Images)

Conclusion

This reports aims to bridge the gap between media policy (which in Europe's past has been responsible for proactively securing diversity of opinion and content, mainly via state-funded public service broadcasting) and telecommunications policy (which deals with net neutrality). By doing this, the report points out the policy issues requiring scrutiny to protect the well-functioning of the public sphere. These issues include net neutrality and communal broadband to ensure *universal access.* They include data portability to insure against fragmentation of services and applications diminishing the well-functioning of the public sphere. The report also considers the proper allocation and maybe re-allocation of funds which so far have been dedicated to public service broadcasting (in order to secure diversity and quality of content); rule-setting for content carriers (including rules concerning issues of privacy in many-to-many communications) and, finally, putting limits to the use of Big Data for the purpose of opinion engineering (to control the power of opinion).

The report further offers a set of criteria for assessing the issues by. These criteria are derived from a model which describes the critical design dimensions that are relevant for the well-functioning of the public sphere. Parameter setting in each dimension will have an impact on how well the public sphere can perform according well established values of *Freedom of Expression, Public Participation, Liberalism, Privacy, and Public Rationality.*

Beyond these parameters are further overarching issues requiring mention. Regulation is one of them. Concerning regulation, the EU is the sole actor charged with imposing new rules for companies, invariably headquartered elsewhere, to operate along within EU borders. In cases where regulation proves to be the best option, the EU should strongly consider utilizing its power to introduce new international laws.

Market orthodoxy is another notable point. Mere competition, this report argues, is not sufficient to ensure that all services and contents which are of relevance for the well-functioning of the public sphere will be made available on the market. Also, policies that aim to enable the well-functioning of the public sphere should not only focus on consumer protection and economic welfare, but also on the delivery of public and social goods.

Finally, institutionalized monitoring and coordination should be a topic of consideration. Policy issues relating to the networked public sphere are highly interconnected in terms of practicality, but rather disconnected in regard to legal and technological aspects. Therefore, the coordination of efforts to secure the well-functioning of the networked public sphere would be a very worthwhile exercise. This report suggests that the EU should strongly consider institutionalizing this coordination.

These are the major points. There are also topics which we omitted. The report has mentioned the ways information is used and handled in the public opinion formation, including both the segment of traditional media and the networked public sphere as a whole. Information is not data.[54] But, the greater part of online traffic in the Internet beyond 2025 will not be caused by what is commonly called information, but by data - data not produced by humans, but interconnected machines within a digital architecture of the 'Internet of Things' or 'Ubiquitous Computing'. This might include data from traffic and transportation management, financial transactions as well as for 3D printing.

Focusing on information and public opinion formation implies that certain issues have been deliberately neglected in this report, as for instance issues concerning data security, innovation policy or more special topics as the regulation of cryptocurrencies like Bitcoin. The reason for this is not that those issues don't play a role for public opinion formation. Net neutrality, for instance, probably has a significant impact upon innovation. I am not taking up this issue, because my question is which policy options are available for protecting and enabling a well-functioning public sphere – and not to discuss which arguments support or defeat specific proposals (like net neutrality), considered together. In other words; the overall argument of this report should be read with some constraints. As far as the well-functioning of the public sphere is concerned, we should fight fragmentation; find ways to deal with media convergence and to control the power of opinion by establishing rules for content management on social media sites. But there are also other concerns like, like data security, calling for other courses of action, which might be equally important and in some cases even at odds with the design requirements of a well-functioning public sphere.

The goal of this report, thus, is to just establish a framework which helps us to see how far the *citizens' internet* extends – and where it ends. By 'citizen', we mean the classical citizen, as defined in respect to his role in public opinion formation and democratic participation. This concept can, of course be extended into a notion like economic citizenship, where community members act as stakeholders of the commons[55]. But this would be an altogether different story.

Let's stick to one story at a time. In the struggle over the future design of the networked public sphere, many actors are represented by strong lobbies. The telecoms, content services like Facebook and Google, and even public service broadcasting institutions: they are all fighting for revenues and influence. It seems that only the European citizen who inhabits and keeps alive the networked public sphere does not have a voice. It's for him that this report is intended to speak.

Appendix: Design Dimensions for Public Communication Platforms

I want to outline five design dimensions which are relevant for the well-functioning of a networked public sphere (see diagram p. 18):

1. Intake
2. Prioritization
3. Quality control
4. Opinion synthesis
5. Ombudsman function[56]

Note: There is no set recipe for how solutions corresponding to each design dimension should be adopted in any given case. Hence, it is useful to consider the normative principles and values which relate to the different design dimensions. These are the ultimate goals which the well-functioning of a networked public sphere should serve. In making explicit these values and principles, our objective is not to establish or argue for specific set of values or, more narrowly, digital rights. This work has already been undertaken by organizations and actors from a wide range of different backgrounds, such as the *Global Network Initiative* (addressing mostly corporate players), the *UN Internet Governance Forum* 'Internet Rights and Principles Coalition', as well as national governments and parliaments[57]. Here we highlight commonly accepted values and principles which might be of concern for issues related to the (digital) public sphere.

Still, there is a claim involved in the choice of values and principles that we present together with the design dimensions for public communication platforms. Our contention is that individual rights along with principles that apply to democratic organizations and processes are needed when dealing with policy options for shaping public opinion formation. This is a point recognized by the authors of the *Brazilian Civil Rights Framework for the internet*, who emphasize the 'social' and 'participative' purpose of the network" (Art. 2, VI; Art. 3, VIII), and their aim to preserve it. In many instances, individual rights and democratic values are interrelated. But in a number of cases, democracy calls for other and further principles than due respect of individual rights.

Intake

Public communication platforms should be able to receive inputs from all constituents, when that input is of concern for public action. But also rhetoric and the ability to process information and the education level of the audience matters here. To ensure proper intake, stakeholders with limited resources require enabling, because this group is systematically disadvantaged at the point of dealing with questions of high complexity.[58] Only when information can be distributed and received 'universally' - without undue discrimination - is there a chance that all politically relevant messages will come to the public's attention.

From the point of normativity, intake relates to principles of freedom of expression, public rationality and to democratic participation.

They are relevant to the principle of neutrality in respect to conceptions of the good life, which sets limits as to which issues are concerns for public action. In some instances; like whistleblowing, privacy of communication can also play a role.

FREEDOM OF EXPRESSION

Freedom of expression (or 'freedom of speech') is a widely recognized right in the digital sphere as it is for liberal democracies in general[59]. Often the concept includes rights to receive information, sometimes is termed 'freedom of information'. The term 'freedom of information' might be misleading as it's also used to mean the right of access to documents held by public authorities. Usually 'freedom of expression' is conceived of as a defense right protecting the individual citizen but also the media against the influence of the state. Accordingly, it is claimed by the *Charter of Fundamental Rights of the European Union,* Art. 11, that Freedom of expression:

> *"Includes freedom to hold opinions and to receive and impart information and ideas without interference of public authority and regardless of frontiers. The freedom and pluralism of the media shall be respected."*

Freedom of expression can be justified both as a basic civil right and as an instrumental principle which is subordinated under the more inclusive purposes of liberal democracy. Thus, the *Global Network Initiative* states:

> *"Freedom of opinion and expression supports an informed citizenry and is vital to ensuring public and private sector accountability. Broad public access to*

information and the freedom to create and communicate ideas are critical to the advancement of knowledge, economic opportunity and human potential."[60]

This phrasing can be interpreted as containing different arguments, such as:

- Freedom of expression enables informed choice. That informed choice leads to better decision making in situations of political voting which then translates into better policy outcomes.
- Freedom to receive information ensures public and private sector accountability. That accountability of public authorities and the private sector is a basic feature of legitimate governance or of democratic governance.
- Freedom to receive and impart information is necessary for the flourishing both of individuals and of society. Note: Information, in this context, should be understood not in the broad sense as 'data', but rather in the narrower sense as it is used in everyday language. Broadly speaking, "information" in this sense represents something which can be true or false, relevant or irrelevant, new or well-known.[61]

Much can be said concerning the further justification of these claims and regarding the scope and significance of 'freedom of expression' in its various conceptions. Here, we highlight the more general point that individual rights and principles of liberal democracy are intertwined in a way that it would not make sense to limit the validity of these values and principles to issues dealing with individual persons.

PUBLIC PARTICIPATION

By definition democratic governance must allow for public participation in political decision-making. In recent times and especially in the context of EU politics, this has been interpreted such that political institutions should be open for forms of deliberation which receive inputs not only from individual voters and published opinion, but also from civil society (consisting of various non-governmental organizations and advocacy groups aiming to represent interest and will of citizens). In order to achieve openness to inputs from civil society these public consultations often accompany legislative procedures both on the national and the EU level.

LIBERALISMS

Liberal democracy must, to a certain degree, be neutral concerning conceptions of the good life, thus respecting citizens' rights for freedom of various sorts[62]. The scope of neutrality is highly contested; plus practices regarding neutrality differ to a great extent between democratic countries. Some topics of debate are religion (should the church be in the position to take advantage of state power to collect tax money from its members?), sexuality and family life (gay marriage) and lifestyle choice and politics (is a smoking ban or the taxation of foods that cause obesity a violation of personal autonomy?).

PRIVACY

Privacy and data protection are huge issues for digital communications[63]. Here, we will just touch upon those aspects which are of immediate relevance for public opinion formation. One of these aspects is the

protection of private communication against intrusions which could reduce the options for political mobilization. The argument here would be that in these privacy settings are an instrumental value to safeguard against malevolent or overly powerful government. Another aspect is to ensure that information provided by users in public networks is only accessible to the general public to the extent which is defined by these users, thus ensuring the "right to respect for private and family life, home and communications" as formulated by the likes of the charter of *Fundamental Rights of the European Union* (Art. 7). Both these aspects are touched upon for example in the *Brazilian Civil Rights Framework for the Internet*, which defines privacy as the:

> *"Inviolability and secrecy of the flow of users' communication through the Internet" , also: "Inviolability and secrecy of user's stored private communications" (Art 7, II u. III).*

Bear in mind that debates about the 'right to be forgotten' show how respect for an individual's wish to remove personal information from web contents can be at odds with the freedom to receive information for others.

Prioritization

The second step is the prioritization of those issues which have already been classified as relevant for political action within the intake process. Here, the issue is ranking in terms of urgency, impact and other criteria. Public communication platforms should somehow be able to give priority to issues of political importance, rather than to topics

which are addressed for reason of mere self-interest. One example for the latter is how in the US election campaign managers provoke discussions about gun control or abortion so as to appeal to a minority of strategically important voters[64]. Another issue is how interest groups nowadays abuse social media to intimidate public persons and employ multiple aliases (a practice known as *astroturfing*[65], in order to get their message out in comment forums. These efforts also aim at a deliberate distortion of the priority of issues. Allowing side issues to have precedence on the public agenda runs counter to the norms of public rationality (see below), as this intentionally deviates consideration for those ideas and arguments which are particularly relevant for public action.

PUBLIC RATIONALITY

Democratic governance and decision making is supposed to conform to basic conceptions of public rationality[66]. Public rationality includes, first of all, notions of social justice, based either on general conceptions of just procedure or concrete rules of fairness. Other components of public rationality as demanded by democratic governance are requirements for the legitimacy of decision making. With the exception of people power (in its radical form), democracy entails that decisions taken should be the outcome of deliberation. Proper deliberation, it is argued, must feature universality of access (all relevant ideas and arguments should be heard and taken into consideration) and rational debate (decisions should be taken on the ground of reasons, not of participants' rank or other factors not containing to the quality of arguments)[67].

Quality Control

Platforms for public communication and opinion formations should include mechanisms for content quality control. Such mechanisms could be forms of peer review (such as practiced, e.g., within Wikipedia's editorial process). Reputation metrics are often used as a shortcut for quality control. This is when quality of content is measured via the credibility of the sender. Other instruments are online petition sites where petitions with sufficient numbers of supporters are discussed in parliament (such as change.org or the German parliament's via its e-petition site[68]). Assuring quality, insofar as it coalesces with basing assumptions and decisions on reasons, is demanded by public rationality.

Opinion Synthesis

Once issues are collected, filtered and quality-checked, the issue still remains how different opinions on these issues should be represented and aggregated. Voting (e.g., by majority vote) is a traditional method for synthesis. Other forms of synthesis exist, such as deliberation practices, which do not reflect the popularity of issues, but rather the quality of arguments. Filtering algorithms indicating the popularity of an issue or item also represent a form of opinion synthesis. One issue to keep in mind is that for sake of outcome quality, it is often necessary to pay attention to information provided by minority opinion, as these can correct otherwise distorted results[69].

The applicable normative background when decisions about the proper form opinion synthesis have to be taken is that of public rationality (see above). In the case of voting, privacy also becomes an issue (see 'Privacy' above).

Ombudsman function

Creating and maintaining platforms for public communication would be an idle undertaking if there was not some possible way of transfer from results of communication into politics. Thus, the capacity to effectively address public authorities should be counted as a further feature which platforms for public communication should exhibit. In many contexts, such a role is that of an ombudsman (or citizen advocate), whose task it is to represent the interests of the public in political decision making. Platforms for public communications should, in order to successfully act, maneuver themselves in a position where they are recognized as the functional equivalent of an ombudsman. The normative rationale used by decision makers to integrate an ombudsman feature into the decision process uses the principles of public participation (see above), which applies to democratic governance.

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Netopia's Manifesto

The internet deserves a better debate of ideas. Netopia believes in a free and open internet
where people and companies may safely dwell, where society protects the freedom, privacy and
rights of individuals and creates the preconditions for growth and diversity. Netopia's mission is
to develop visions regarding the future of the internet based on these values.

Netopia does not claim to have all the answers; on the contrary, the questions are central.
Who should decide the ground rules on the internet? What is required for diversity? How can
society guarantee the privacy and freedom of individuals on the internet? Are new institutions
required? Who are the current actors and what roles might they play in the future? Netopia
aims to try and get good answers to these and many other questions.

The internet provides opportunities that may be seized by the EU in order to create the jobs,
innovation and growth of the future. Netopia challenges the political and commercial powers
that limit this potential. We are worried about a scenario where a small number of players
control the development and where political ideas furthering these interests dominate without
counterbalance.

Netopia's conviction is that the internet is an ever-increasingly important part of our society,
which also places demands on society to guarantee the freedom, privacy and rights of
individuals in the digital environment as well. So far, issues regarding infringement of privacy
or intellectual property rights, financial crime, defamation, cybercrime and bullying have been
considered as separate issues. It is more constructive to view these phenomena as an expression
for the same thing: the functions of society are needed also on the internet. Not the same rules
as in physical society, but rules with the same purpose.

Netopia would like to promote the debate of a better online society. We do this on the internet,
through reports, in seminars and other forums. It is time for the internet to take the next step.