TAB

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Regulations for access to the information society

Summary

SUMMARY

Access to the information society occurs at various levels and covers the technical access to the internet by the users but also peoples' ability to use this medium and incorporate it in their daily media usage and their daily routines. The access to the internet or to particular internet platforms by the providers of information and content is also relevant in this context.

Despite its ever more pervasive presence, however, the internet is not the only medium for self-monitoring by society, for information and communication and the empowering of social participation: the press, radio and television are also media which offer *access to the information society*. Their provision and the way in which they are used are changing more and more, and conventional demarcations are blurring: people can watch TV on their mobile phones, telephone via their computers, surf the internet via a cable connection, read the newspaper on an e-book reader, and program the radio schedule to their own individual taste.

As a result of these developments, legislators are faced with the challenge when regulating the media and/or telecommunications of keeping pace with innovative, hybrid output, devices and ways of using them, and adapting their regulatory measures accordingly. The aim of the media and network policy is to eliminate barriers to media innovations and, at the same time, not to lose sight of the normative aspects of the diversity of providers and opinions in an increasingly convergent media world.

Against this backdrop and at the suggestion of the Bundestag Committee for Business and Technology, the responsible Committee for Education, Research and Technology Assessment commissioned the Office for Technology Assessment of the German Bundestag (TAB) to address this issue and draft this report.

This report deals in the widest sense with the correlation between media innovations and media regulation. The central questions are: What role do state, regulatory specifications and measures play in a media world which is increasingly characterised by convergence and in which the internet is taking on more and more importance? What design potentials and options are available to government in principle? How can the theoretical and practical potentials of the new media for innovations be developed?

With reference to the overarching subject of *access*, three issues have been identified as particularly relevant, and these consequently run through the entire report, namely *broadband, convergence* and *key media*.

ASPECTS OF ACCESS TO THE INFORMATION SOCIETY

Broadband

The question of network access has focused in recent years on the question of providing the population with broadband internet connections. To support network expansion, new strategies and tools are required which have not been part of the telecommunications policy up till now. The justifications for government action to expand the broadband infrastructure relate particularly to the regional and overall economic impacts. A further reason cited for providing broadband internet to the entire population is to enable people to share in the nation's cultural and political life. Today, a broadband connection is frequently regarded as a *digital public service* and designated as the *umbilical cord to information, social contacts, services and knowledge resources in our world*.

The increasing range of output and services on the internet means that the data volume to be transmitted by the network has grown. A high-speed, fibre optic-based network infrastructure with the corresponding end customer access points is therefore necessary in order to achieve the innovation potentials of new digital applications, such as cloud computing, e-government, web TV and e health.

Although the level of provision of broadband internet is high in Germany, with more than 90% of the German population having access in principle to an internet connection with a transmission rate of up to 2 Mbps, only approx. 65% of the population use such connections. It is also already clear that much higher speeds are needed in order to make appropriate use of the internet applications of the future.

Convergence

Convergence is understood to mean the linking or merging of output or functionalities from the telecommunications and media sector. The notion of media convergence has undergone a conceptual change since the 1990s: whereas at the start of the development of convergence it was assumed that an implosion of all media – press, film, TV, internet – would occur, from which something new

would emerge that would be accessed via a standardised multimedia terminal, the focus now is on the expansion of relevant specific media.

That is because the technical integration of networks and services turned out to be just one side of the digital revolution, while the other side reveals an increasing disintegration, a trend towards differentiation and fragmentation. Instead of an implosion of all existing media, we can now see a variety of new mixed forms, partial combinations and overlaps between content, services, networks and devices. This development is more akin to a media explosion.

There are two implications when it comes to analysing current, convergent media output. Firstly, it should be noted that the technical options alone have not given rise to a single, overarching and uniform model for the development of the digital media. Rather, it is always necessary to analyse the development conditions for convergent media output specifically and taking account of the context of their respective origin (press, radio, TV, internet) and their special usage conditions. Secondly, considerations relating to the convergence of regulation, derived from the technical convergence, seem less plausible initially. That is because a convergence which does not result in standardisation, but rather in multiplication and specialisation requires regulation which is not based on an abstract principle, but is capable of re-adjusting to constantly new media combinations.

Key media

The third issue in this report relates to the question of to what extent the internet should already be regarded as a key medium now which is complementing, repelling or even replacing the established key media of the press, radio and TV.

When addressing the concept of the *key medium* in greater detail, however, it becomes clear that it is not easy to draw up a clear definition. That is because the media output used via the internet is provided to a large extent by conventional media companies (press and broadcasters). Although it is disseminated via the internet, editorially, however, it originates in the traditional domains of press and broadcasting. Original web content, such as the user videos on YouTube or news on pure internet portals, supplements the output imported from the old world.

The specific ways in which the internet is used must also be noted because, unlike most of the other media, the ways of using the internet are very diverse. Thus, as is well known, the internet is not just used for information and entertainment

purposes, but also for interpersonal communication via e-mail, instant messaging and in online communities. Media usage studies, which only report the total internet usage time and cite this as an indicator of the increased relevance of the internet for public agenda-setting, therefore often present an inexact picture.

Communication experts have proposed criteria for determining to what extent a medium can be seen as a key medium, and these have been appropriately applied in this report. The criteria used in describing the development lines in the media categories of press, radio, TV and internet, with the purpose of determining the changes in key media are as follows: universality, topicality, periodicity, publicity and editorial autonomy. Further, more specific criteria will also be examined. These are:

> Reach as a mass medium
> Competence and quality attribution as a quality medium
> Focus on policy issues with a normative positioning and
> Normative guide role in terms of issues for other media output

INTERNATIONAL BROADBAND STRATEGIES

The broadband strategies in Australia, Finland, the UK, Japan and the US are presented to add international experience to the debate in Germany and produce a six-country comparison.

It should first be pointed out that there is no standard definition of broadband internet. Instead, it has a range of possible meanings, both in terms of transmission speed, which can vary from 256 Kbps to several Gbps, and also with reference to the technology used and the respective terminal devices.

At present, broadband internet is overwhelmingly used in all the countries in conjunction with a desktop computer which is connected to the dedicated circuit network (telecommunications network or broadcast cable). Increasingly, however, mobile devices, such as wifi-enabled laptops or smartphones and tablet computers with broadband internet access via 3G and 4G mobile phone technologies, are also in use. Broadband connections via fibre optic cables (»fibre to the home«, FTTH) occupy a special position: these permit the highest transmission speeds, ranging from 50 Mbps to several Gbps, and are seen as the most promising technology for the future in the broadband sector. At the same time, it is the technology with the lowest current take-up.

The greater the importance of the internet for business and society, the more important it appears that all parts of the population in every area of the country should have access to a broadband connection in one form or another. In fact, however, this is still not the case everywhere yet. There are shortcomings in all the countries, especially in the provision for rural areas and the development of fibre optic networks. These two issues are linked, in that in both cases the network operators have to take long-term investment decisions with uncertain refinancing prospects.

Since the market alone cannot guarantee blanket provision of faster and faster broadband connections, the onus is increasingly falling on the state to provide incentives for developing appropriate infrastructures. This can take different forms. The respective approaches and experiences in the selected countries are outlined below in order then to highlight common aspects.

Germany

Broadband provision in Germany is regarded as relatively good. Although only approx. 65% of all households actually use a broadband internet connection, according to the Federal Government's broadband atlas 98.5% of all households in Germany were in principle able to use broadband internet services with a transmission speed of at least 1 Mbps as long ago as the end of 2010.

The »basic broadband provision« was one of the first interim targets of the broadband strategy. The next broadband strategy target, namely to provide a major proportion of the population with connections of at least 50 Mbps, seems a long way off. The construction of fibre optic networks is currently proceeding comparatively slowly and selectively. The current situation gives rise to three main questions: What action can be taken to increase the take-up of broadband internet in the population? What framework conditions are required in order to accelerate the development of fibre optic? What new models are suitable for further network expansion in rural areas?

Australia

Broadband connections via the telecommunications network or broadcast cable were expensive in Australia in the past and were also relatively little used compared with other countries.

It was against this background that the Australian government launched its broadband initiative in 2009 with the goal of developing a »National Broad-

band Network« (NBN) by 2021, ultimately reaching 93% of all households and companies via fibre optic. The remaining 7% should gain access via wifi networks and satellite connections. On completion of the broadband network, the state-owned holding in the NBN operating company is to be sold to the private sector.

The Australian government stresses the overall economic benefit of a comprehensive fibre optic network which, in its view, extends beyond the business benefits to individual network and service companies. This is the justification and reason for government involvement.

If Australia actually succeeds in implementing on schedule the NBN activities which were launched in 2010, the country will have left Europe and probably also the US far behind in terms of the broad provision of fibre optic connections within less than 10 years.

Finland

Mobile phone technology plays a major role in Finland, but broadband fixed-line connections are also well developed, so overall the country has a very good broadband internet provision. One reason for this good provision was the broadband strategy agreed back in 2008 which aimed to achieve a basic provision using 1 Mbps connections. To that end, the Finnish government classified a broadband connection as a universal service and introduced an apportionment procedure for network operators who have to provide remote and thus unprofitable areas with at least 1 Mbps connections.

Furthermore, the Finnish broadband strategy has also set itself the target of having a fibre optic backbone network in place by 2015 whose connection points are never more than 2 km away for 99% of all households and companies. The government expects that there will be a competitive market to provide connections for the overwhelming majority of households (95%) and is planning a subsidy only for the remaining 4%. However, the network expansion will only be subsidised up to the vicinity of the relevant buildings. The last 2 km to the homes will have to be funded by the owners themselves.

It is unclear at present to what extent Finland will succeed in actually meeting its ambitious broadband targets. Currently, there are few fibre optic connections for end customers in Finland. The telecommunications operators are concentrating their efforts on building the backbone network and providing services to the population centres. However, the Finnish government's broadband strategy has

delivered clear planning specifications and initiated a wide range of activities with its proposed subsidy for remote areas.

UK

In the UK, too, the basic broadband provision is regarded as relatively good, though at present over 10 % of the population still have no access to a broadband connection offering more than 2 Mbps. This particularly applies to the residents of the marginal areas in South-West England, Wales, Scotland and Northern Ireland, but also in many areas adjoining the major population centres.

Connections of at least 2 Mbps are of particular importance in the UK since the »Digital Britain« broadband strategy envisions providing all UK residents with such minimum bandwidths (via a fixed-line or mobile network) by the end of 2014. The UK broadband strategy's next target is to develop one of the fastest broadband networks in Europe by 2017 which is then intended to be accessible by 90 % of all UK residents. The government is not tying itself to a particular data transmission rate; instead, it defines all connections between 24 and 100 Mbps as *ultrahigh speed*.

To meet this goal, the UK government has opted for direct subsidies to expand fibre optic networks in rural areas. At some £2.5bn, these subsidies are substantial and are an unambiguous declaration of intent by the government to develop an ultrahigh-speed broadband network.

Japan

Japan is considered to be the world leader in fibre optic technology: of all the fixed-line broadband connections, more than half as long ago as the end of 2010 were fibre-to-the-home connections. Expansion of the fibre optic network has been a priority in Japan since 1999, especially in the conurbations of Tokyo and Osaka, where more than 80 % of the population of Japan live. Fibre optic connections have outnumbered DSL connections since 2008, and a gradual replacement of network technologies is taking place, meaning that more and more Japanese can access bandwidths of 50 Mbps and more.

Despite having the latest infrastructure, only relatively few households use a fixed-line broadband connection. Of the countries examined here, only Australia has lower fixed-line use. On the other hand, the mobile use of internet-based services is very widespread. Japan sees itself as the technology leader in mobile broadband connections.

Broadband internet has long been a political issue in Japan. The government has been offering incentives repeatedly since the end of the 1990s to develop and expand the broadband infrastructure. The current target is to provide the entire population with ultrahigh-speed broadband connections, and the government wishes to ensure this by offering cheap loans, guarantees, low corporate taxes and subsidies.

The challenge in Japan lies in connecting the still underserved rural areas, including the sparsely populated islands, to the fibre optic network and promoting the population's internet skills. There is a pronounced digital chasm in Japan because of the large urban-rural divide and the high average age.

USA

With regard to broadband internet, the US currently finds itself in the unusual situation of having to play catch-up. This is astonishing because for a long time the country led the way in broadband use via DSL and cable modems.

Apart from the large amount of rural regions as a proportion of the overall area of the country, the weaker growth in the US than that seen in the other countries is attributable to the competition situation in the connection field, which has led to high connection prices. A further reason for its falling behind with reference to broadband use was the long-time lack of political support. The change in government from the Bush to the Obama Administration ushered in a fundamental policy change which also impacted on the broadband policy.

In »Connecting America«, the Obama Administration published a national broadband plan which outlines ambitious targets, proposes comprehensive measures and provides for large public investment. One of the measures already implemented is the extension of the universal service to the area of broadband connections, which is making money available to expand the network in rural areas. Comprehensive monitoring of broadband development is also intended to improve the situation.

The scheme shows that the US is seeking to regain its world-leading role in broadband expansion. It is unclear, though, whether the measures will also lead to the desired result as the restricted competition situation at the local level is not so far being addressed in the measures. However, the »National Broadband Plan« has launched a number of successful fibre optic projects in the meantime.

Overall results from the six-country-comparison

This survey shows that there are a number of countries in the world which, in terms of their broadband expansion, have set out significantly more ambitious targets than Germany. This relates in particular to the targeted bandwidth and level of coverage. The developments in other countries also show, however, that targets and schedules occasionally have to be modified, postponed, have their content expanded or be given a new urgency or a more precise definition.

One common feature in all the countries studied is the new role of the state. This has changed quite clearly from the attitude of fundamental non-interference in the telecommunications sector to one of cautious involvement in shaping broad-band infrastructures. All the broadband plans here provide for government in-volvement in one form or another, which is not limited to ensuring the market framework, but also covers more far-reaching measures up to and including financial support in expanding the network.

One version of this government involvement is the public-sector participation in so-called open-access networks, i.e. fibre optic networks which are established as public-private partnerships and whose network capacities are marketed to content and service providers.

In all the countries studied here – with the exception of Germany – the respective initiatives also provide for measures to stimulate broadband internet usage. In Germany the onus is particularly seen to be on the individual state governments with regard to demand-focused measures since these are perceived primarily as educational measures.

In many countries throughout the world precise and up-to-date information continues to be regarded as key in respect of the availability of different types of broadband connections. One example of this is the activities of the the US reg-ulatory body, the Federal Communications Commission (FCC), which collects data about connections and supply at a very detailed level and then makes it available by means of an interactive broadband atlas.

Development in the press field

The daily newspapers are the oldest of the mass media examined here. They were long regarded as a particularly important mass medium for political agen-da-setting. They are overwhelmingly published by profit-focused publishing companies and are financed partly by advertising and partly by sales revenue.

Digitisation impacted initially on the editorial work process, followed quickly also by production and distribution, and then – at the latest with the mass expansion of the internet – also on the offer side. Daily papers are still primarily published in hardcopy form, but also in a range of electronic variants for different terminal devices.

Key medium

That daily papers, especially some national titles, act as a key medium is undisputed. Some indicators, however, suggest that this status is under threat. This is in part the result of eroding business models since both advertising and sales revenues have fallen continually in the last few years. This is threatening the quality of the leading titles perhaps less than the large number of regional and local newspapers. To this can be added the fact that the digital offshoots of the newspapers, which are now taken for granted, require not inconsiderable investment that can only be recouped in the rarest of cases by online advertising, which is still the dominant business model.

However, daily newspapers have seen an almost dramatic loss of reach which threatens their status as a key medium. This reach fell overall for the population as a whole (14 years and older) from 67 % in 1974 to 44 % in 2010. Among the young and somewhat older population groups the reach fell from a level of around 60 % in the 1970s to just 19 % in 2010 for the 14–19-year-olds, 30 % for the 20–29-year-olds and 26 % for the 30–39-year-olds. In addition, the average daily reading time among the population as a whole fell from 38 minutes in 1974 to 23 minutes in 2010 and, among young people between the ages of 14 and 19, to just 6 minutes.

Convergence

If convergence is understood to mean the blurring of the boundaries between the established media, then the newsroom which has now become an established element of many newspaper (or media) companies is the prototype of this media convergence. That is because the newsroom manages the production of editorial content initially in a »media-neutral« manner and then distributes this to the respective media outlets, from the printed daily newspaper (or multiple issues of the printed version) to various digital outputs, and on to placement in radio and TV schedules. The technical basis for this multimedia multi-usability is the complete digitisation of all media outputs.

But other more or less typical features of newspapers are also under threat from the process of digitisation. The digital newspaper does not have any fixed publication deadlines and definitive issues; instead, updating occurs continually and is event-driven. The users of digital issues can, if they wish, put together *their* newspaper edition themselves (»individualised newspaper«) using news aggregators. These news aggregators (e.g. Google News), incidentally, are involved in setting the agenda in a very new way and a hitherto unfamiliar role as a result of their partially automated selection processes. Ultimately, the digital newspaper is no longer restricted to printable text and images, but can also supplement these with sound, video, animation, simulation, interactivity and other elements.

Media regulation

Against this backdrop, it is legitimate to ask whether it is still possible and meaningful to retain a definition of the press which emphasises the »physical duplication of thought content in text form«. This is no mere theoretical question of semantics since the definition of the press also entails certain duties (for example, editorial due diligence) and also privileges (for example, the duty of public bodies to provide information) for the press. One current topic is the dispute between press publishers and broadcasters, triggered by the »Tagesschau app« (the news app published by ARD, one of Germany's public service broadcasters), where the fundamental debate is about the extent to which broadcasters can post text-dominated content on their internet provision and whether digital newspaper versions can be supplemented by sound and video output.

Another current conflict line is that drawn between the newspaper publishers and the major internet platforms (such as Google) which make newspaper content searchable for users and partially also rearrange it in news portals, without being directly involved in the content production. The newspaper publishers see this as an abuse of their content and are demanding an ancillary copyright law, which is also being planned by the current federal government, but is highly controversial as far as the public are concerned.

Another disputed media policy issue is the safeguarding of quality journalism in the face of eroding business models – an issue primarily for press publishers, though in part also for other mass media. State support for the press is available in various guises in many European countries. The reduced VAT rate applicable in Germany could also be viewed as support for the press in that sense. There are more far-reaching models of state support for the press, such as a model for a »public service publisher« under discussion in the UK or a »press support foundation« (by analogy with the various film promotion schemes offered by the

German federal and state governments), though it is suspected that these have very little prospect of being implemented. However, media policy-makers should keep a watchful eye on safeguarding the conditions for quality journalism.

DEVELOPMENT IN THE RADIO FIELD

Radio is the first electronic medium among the mass media examined here. In Germany it has become more widespread than any other medium from the 1920s to the present day. Initially it was under government control. After the Second World War it was reconstituted as public-service broadcasting (independent of the government), based on the UK model. From the 1980s, public service radio was supplemented by private commercial broadcasters and community radio which operates in certain niches. Today, the internet has resulted in a completely new range of radio service providers and ways of using radio channels. Against this backdrop, the oft-identifiable tendency to neglect radio in the media policy debate is inappropriate, although it must also be stated that technological innovations initiated or supported by policy-makers were often unsuccessful in recent decades.

This relates primarily to efforts to digitise radio transmission and reception. Although digitisation has now completely taken over the production process in the radio sector, analogue FM radio is still predominant among the great majority of radio listeners when it comes to transmission and reception. This is a notable peculiarity of technological development compared, for instance, with television where the digitisation of all transmission media is almost complete.

In economic terms, the radio market in Germany appears positive with further growth prospects, even if it is not comparable in its size and importance with the much larger television market. Similar to the case of newspapers on the web, there are as yet no stable business models promising success for web radio.

Key medium

Radio is a key medium with a particular stamp. It boasts reaches unmatched by virtually any other mass medium. Viewed as a whole, the varied programming range undoubtedly represents a quality medium, even if not every programme or every individual channel matches this claim. Scarcely any other medium can match the density and immediacy of political reporting, complemented by extensive background reporting, in the form of, for instance, discussions, features or magazines. Time and again radio reveals its particular quality as an information

medium at times of disasters and crises in which other infrastructures may fail (power supply, telecommunications, print media, TV reception), but analogue radio transmission and reception still works.

The fact that radio is often characterised as an accompanying and background medium does not in principle negate its status as a key medium because the attention mode can be restored at any time via appropriate key stimuli or, as has been formulated in the past: You may not be listening, but you don't miss a thing.

A brake of digitalisation and the future of digital radio

Radio seems to be in a difficult position as far as digitisation is concerned. The superseding of analogue FM radio, for which attempts have been in progress for no less than 25 years, has stalled. On the other hand, entirely new radio formats have emerged on the internet whose frequency of use is increasing continually, even if at a low level and especially among the younger age groups. At the same time, it may be assumed that the conventional, linear schedule in *broadcast mode aimed at a broad audience will survive for the foreseeable future and find its own listenership. Perhaps it is time to move away from the notion that »classic« radio can only survive if it is also transmitted and received digitally. The challenge will lie in linking this conventional format with new, innovative, digital web radio stations and functions, as is already starting to happen.*

Media regulation

Radio will substantially expand its ways of being played. The criterion of linearity of programmes, which has taken centre stage as a result of radio regulation, will only still apply to some of the radio output, whereas much of the new digital on-demand output will no longer meet this criterion. As in the case of similar demarcation issues for the other mass media, the clarification by media policy-makers as to what should be classed as radio is not without practical relevance. That is because what is regarded as radio is subject to different, and mostly more stringent, requirements (approval requirements, advertising restrictions, diversity provisions etc.) than would be the case if the corresponding output were classified as part of the telecommunications media.

DEVELOPMENT IN THE TELEVISION FIELD

Since its introduction in the 1950s, television has undergone very dynamic growth. It can demonstrate a number of technical innovation leaps (transmission of live pictures, introduction of colour television, cable and satellite television, digitisation, high-definition television, 3D TV), which have resulted in continual improvement in picture quality. The multiplication of transmission channels and new private television providers since the 1980s have contributed to a significant expansion in the provision of television content, a development which has received further impetus as a result of the internet.

Key medium

Of the media categories examined here, television is the medium with the longest daily period of use by the public. It is unreservedly possible to ascribe a key media role to television today in terms of reach, quality image, normative positioning and role model function for other media output. In some areas, however, there are developments in the offing that represent a threat for this situation, which has been taken for granted for decades, and may require a reassessment for the future.

As far as *classic* television is concerned, which is constructed around the full, linear schedule broadcast around the clock, the phase of quantitative growth of reach and viewing time appears to be past. The latest results indicate a reversal of the trend, which is mainly attributed to the increasing use of online media. In the youngest age group the internet usage time now exceeds the TV viewing time – if the time for online games is added to the usage time. Overall, this could be an indication that television will lose its undisputed leading position with reference to media use in the long term. The reason for this, however, is not that television is losing importance itself, but that the online media are gaining in importance. This can be seen in the massive increase in usage among the young user group and the growth in usage time in the population as a whole. The increasing interlinking between television and online output plays a major role in the question of the shift in key functions.

Convergence

The interlinking between television and online output (web TV, media centres, electronic programme guide, hybrid and mobile TV etc.) really does form an extremely dynamic area, prompting a wealth of speculation about the future of television as a medium. It should be borne in mind with such speculation, how-

ever, that although the use of television content via the internet is triggered by conventional television schedules, it still has television as its content producer, reference point and institution.

Fundamentally, however, it must be noted that what is termed the delinearisation of television schedules represents an important trend. Individually accessing television content on a home computer or on a mobile device when out and about also involves a change in the classic use. The shared television experience, which was at the heart of domestic media use and shaped the structure of day-to-day life, will perhaps be lost in the future or will concentrate on individual TV events such as sport or entertainment shows. What is undisputed, on the other hand, is the fact that the digitisation and provision of TV content on the internet have greatly increased choice and the selection options in principle for television users and have therefore gone a little further towards realising the vision of the television viewer who has become his own director of programming.

Media regulation

The development of television, with the impacts of digitisation, convergence and changed usage patterns, throws up a range of regulatory questions. For this report three issues have been selected which illustrate the basic problem of TV regulation in the digital age: definition of broadcasting, concentration control and internet presence of public service broadcasters.

The first issue relates to the *definition of broadcasting* and is important in Germany because there is a regulatory differentiation between broadcasting, telecommunications and what are termed telecommunications services. Accordingly, television transmissions via DSL (IPTV) or to a smartphone (mobile TV) are classified as broadcasting, since this is fundamentally conventional scheduled TV which is being made available via new channels. In the case of on-demand TV programmes via the internet (web TV), however, this does not apply, as this is non-linear output which can be used at user-definable times. But if content criteria are applied to web TV, this is also seen as broadcasting, because web TV is aimed at a large number of people, the programmes can be just as topical as conventional TV channels, and they can have the same suggestive power. The convergence of the media, which is evidenced, for instance, by new internet output featuring video, can no longer be encompassed using the definitions and demarcations used hitherto.

The second issue, which is associated with the needs for the television system to adjust following the emergence of the internet, relates to the *concentration con-*

trol in the television field. Safeguarding the diversity of programming has been a normative requirement of television regulation for years. Until now, market power has been determined using tools which only relate to classic TV usage. The fact that the internet has a growing importance in the competitive world of publishing and that there are cross-media corporate groups has not been reflected to date in the existing system.

The third issue, which raises the media policy implications of growing convergence, relates to the question of what public service broadcasters may or may not do on the internet. The Retention Time Regulation has been the subject of criticism since its introduction in Germany in December 2008: this regulation states that the programmes of public service broadcasting bodies may only remain online for a limited period, after which they have to be deleted. Basically, the obligation to delete means the archive and call-up access function of the internet, one of the internet's strengths, is being restricted. Although it appears to be difficult to assess the contrary interests of public service and private media players objectively, the deletion of content once produced is more or less incomprehensible, against the backdrop of media convergence and, in particular, from the users' (and licence payers') point of view.

DEVELOPMENT IN THE INTERNET FIELD

The internet is both the cause of the various processes driving developments in the classic media categories and also the consequence and beneficiary of these processes. This is because the internet would have achieved nowhere near the level of popularity which it currently enjoys without the journalistic, documentary and entertainment-related input from the press, radio and television. Furthermore, however, the internet has also resulted in new content providers and output which are based on the specific properties of this new multimedia and networked medium. Strictly speaking, the internet is not a medium, but a technical platform on which a range of media content and communications services are offered.

Key medium

The increasing importance of the internet in people's daily media consumption raises the question of to what extent the internet has already become a key medium or to what extent it has already taken over the function of the press and radio. With regard to the criterion of *mass medium* which emphasises the reach of the medium, the difficulty is that there is still no established definition for

mass media reach which is applicable to all media categories. Furthermore, only provisional data is available to allow the currency of online and offline reach to be compared.

In terms of the criterion of *quality medium* it may be stated that the professionalism and quality on the internet, at least as far as the journalistic online output of large publishers or radio and television providers are concerned, is largely equivalent to that of print and radio journalism. With reference to normative positioning on political issues, too, the online journalistic output may be said to be equivalent to the online media.

A further criterion is the extent to which the other media are geared towards internet-based reporting. It may be stated in this regard that online editorial output – such as Spiegel Online – now plays an important role with regard to stories across all the media categories which is only surpassed by the news agencies. As far as the co-orientation on online output as exemplary *quality media* is concerned, the picture turns again. Among journalists from established print and broadcast outlets the dominant view of online journalism in general is that it is »second-class journalism«.

It may be said in conclusion that the internet is en route to becoming a mass medium even though it is difficult to determine this unambiguously because much of the content is imported into the internet from the classic media categories. What is still lacking in the publishing output on the internet is the proof of an editorial line which is independent of the mother medium and an even clearer identification as a *quality medium*.

Convergence

The emergence of the internet and its establishment as a new medium is a significant driver for the advancing media convergence in all media categories. The relevant sections on the press, radio and television illustrate typical convergence phenomena which are all based on the availability on the internet of content from the traditional media. The internet is a distribution and recombination platform for the traditional media and therefore represents a genuine convergence medium. The convergence-related developments at the various levels repeatedly permit surprising applications – sometimes transient, sometimes sustained – which means that predictions about future media usage are difficult.

With regard to usage it is not only the case that convergence can be seen in terms of content in the internet field, but also an expansion of media activity as

a whole. Especially as a result of the increasing use of social networking, a new type of communication has developed which is no longer just bilateral as hitherto, e.g. by phone or e-mail, but which addresses itself to smaller or larger groups which form the respective social network. This »one-to-many communication« complements the established range of communications with a component which played no role in the traditional media in the past and for which there was also no technical provision there.

Media regulation

The media and regulation policy issues being discussed in connection with the internet are diverse and ever-changing. This report addresses the issues of diversity of output, platform and network neutrality, copyright and the new relationship between private and public on the internet.

With regard to the diversity of output, the first thing to state is that although the internet offers a huge diversity of providers and its content is almost limitless, a look at the actual usage reveals that this is a »theoretical« diversity. In fact, the majority of users only access a few pages. The diversity occurs mainly in the niches. Government regulation therefore appears to be necessary even in the internet age to safeguard the freedom of information and speech. This should particularly be focused on preventing or restricting media concentration. With that in mind, it will be necessary in future to develop a new model for measuring media concentration which looks not only at the established terms such as *viewer market share* and *related markets*, but also includes the dynamically changing relevance of the individual media categories for agenda-setting.

Network neutrality is a key issue. Up till now, data transmission on the internet has been organised on the basis of the »best effort« principle, i.e. each data package is treated and transmitted with the same priority. If these *best efforts* are inadequate because the data volume to be processed exceeds the network capacity, the result is a data jam. For many applications this is not a serious problem, but for real-time applications, such as Voice over IP, IPTV or online games, such delays threaten the applications' very functionality. The telecommunications companies therefore wish to prioritise these services. Data prioritisation could, however, also be used by a company to favour its own offerings or to introduce a new business model in which the content providers who offer the most receive the fastest lines. This would permit the network operators to become the gatekeepers of the internet, the more they deviate from the principle of network neutrality. The future impacts that this will have on the internet and the point from which state intervention will be necessary to codify network

neutrality is currently the subject of intense debate. The competitive situation in the access market plays an important role in this: if consumers are easily able to change their internet service provider or mobile phone operator, government regulation seems less pressing than in markets in which it is not so straightforward to change, because of the market and provider situation. In this regard the situation in Germany, for example, differs markedly from that in the US. Those who advocate codifying network neutrality, on the other hand, point out the costs of changing which accrue even in markets with functioning competition.

The term »platforms« is used on the internet to refer to offerings which collate existing internet content and make it available in a multimedia, user-friendly way. Examples of internet platforms are Apple's iPhone and iPad, Google's »Android Market«, the Twitter microblogging service and Facebook's »Platform Apps«. Internet platforms represent a problem for media policy-makers because they are the gatekeepers for content, providers and usage methods. The current app platforms are closed systems, i.e. the relevant operator exerts full control over applications and content. European and German media policy is faced with the challenge of deciding whether the rules for open access should or could also be applied to such platforms. Here, too, the ability of consumers to change plays a major role.

SUMMARY AND ACTION FIELDS

With regard to all three issues addressed (broadband, convergence, key media), there is a range of tasks to be resolved, e.g. financing broadband expansion, the question of copyright on the internet, and network neutrality. Such issues often become part of the currency of everyday debate following high-profile court verdicts or spectacular corporate takeovers. This report, however, focuses on analysing media policy issues against the backdrop of long-term media change. By presenting the socially and economically driven changes in the mass media, the report is helping more informed decisions relating to media policy to be made.

From the perspective of innovation, the questions about convergent regulation, a clear classification of new interactive services and concentration control on the internet are of particular importance.

The concept of convergence also partially goes hand-in-hand with the notion of regulatory convergence, i.e. an institutional merging of media and telecommunications regulation. This is also repeatedly called for by many players because – so the oft-advanced argument goes – the heterogeneity of the regulatory

structures prevents investment and innovations in convergent media output. However, the analysis of the media developments in this report, but also in other studies, has not identified any evidence which suggests that fundamental new regulation is absolutely essential. Quite the opposite: the system of media and telecommunications regulation, which for historical reasons is legally separate in Germany, seems to be capable of learning and adapting in many regards. This is indicated not only by the comprehensive coordination activities of the regional media organisations, but also by the collaboration between the Federal Network Agency and the Bundeskartellamt, Germany's competition authority. For the future, it appears to be necessary to further optimise the coordination processes and to open up federal media policy to the prospects offered by the internet.

In the age of digitisation and convergence, the sharp demarcations are becoming blurred, and it is becoming more difficult to tell broadcasting, information and telecommunications services apart. Similar to the question of the shape of institutional media and telecommunications regulation, there are also frequent complaints here that the government has not yet set out any standardised classifications and binding demarcations. Although the wish for a unified system is also understandable here, from the viewpoint of innovation research, however, it does not appear to be imperative to make such attributions for new technologies or new media which are in an early and dynamic stage of development. It is, indeed, possible to cite examples where early codification has hindered innovation.

The analysis of internet development shows that the diversity of output in principle on the internet must be seen against a *de facto* concentration among providers and in terms of usage. On the internet there is no automatic guarantee of media diversity just because in theory every user can also become a provider. For that reason, the question of concentration control remains an issue, even in the internet age. The analysis also shows that *media power* on the internet is shifting to new locations and is revealing itself in platforms, portals and search engines. One of the challenges for media regulation, therefore, is to identify what media concentration control should entail in future. This refers in particular to the question of whether the regulation of network and platform neutrality is incorporated in the remit of concentration control and whether the demand for transparency in search engines should represent a further new regulation field.

The synopsis of the results of this report yields the following action fields for broadband, media and network policy:

> *Aims of broadband strategy*: It has emerged that other countries have formulated more ambitious aims in providing broadband internet for their populations. Building on the current provision status and the available data transmission speeds, the aims in Germany should be continually reviewed and, where necessary, modified. Extensive monitoring is a fundamental requirement in this regard.

> *Focusing on fibre optic*: In Germany the expansion of the fibre optic infrastructure into households is only in the initial phase. Open access models are one means of accelerating this expansion. This requires cooperation agreements and accompanying regulatory measures. Developments need to be monitored very closely here because the real problem lies in the actual interconnection of the network and in the cooperation among network operators and service providers.

> *Strengthening of network policy*: Identifying the policy dimension of the fundamental media transformation and responding appropriately to it is a further important action field which can be derived from the analysis. Especially among the younger generation it is a common perception that there is still too little understanding in established political circles of how the internet functions and what prospects and consequences there will be for media policy and in general for the digital world of tomorrow. An open dialogue with the users about the consequences of the media transformation can help strengthen competencies and usher in a new media consensus.

> *Network and platform neutrality*: The aim of any regulation is to guarantee a diversity of providers and discrimination-free access to the new medium. This requires ongoing monitoring by policy-makers so that appropriate action is taken as soon as cases of abuse emerge. Greater transparency should be demanded of platform and network operators in this area. That is because too little is still known about how networks are actually managed and about the impacts of closed platforms on innovativeness. The demand for greater transparency should also extend to the delivery of search results in search engines.

> *Retention period regulation for public content*: The Retention Period Regulation specifies that public service broadcasters must delete certain types of programmes on the internet after a defined time. Since this presumably has an adverse impact on the quality spectrum of the content, the use of other content and in general on the emergence of innovative formats on the internet, the Regulation should be reviewed. An in-depth analysis of the consequences of the Retention Period Regulation could aid clarification in this regard.

> *Agenda-setting on the internet*: Despite the dynamic growth of the internet, the analogue media will continue to play an important role in agenda-setting. Although the internet offers the public a range of new forums, the major media corporations which own newspapers, magazines and radio and TV stations

will continue (for the moment) to be largely responsible for setting the agenda. Freedom of information and freedom of speech therefore still need state regulation to prevent or limit media concentration. The actual developments in the ownership and power relationships between traditional media and the internet and the impacts of cross-media effects should be monitored.

> *Quality journalism*: In view of the eroding circulations of daily newspapers and the difficulties of establishing successful business models for journalistic output on the internet, the issue of safeguarding the conditions for quality journalism is being debated more and more and should remain a focal point of media policy. Problems are seen with reference to local reporting, but also beyond the newspaper sphere, e.g. on the private TV stations' channels. The potential remedies discussed include public grants, e.g. via a journalism foundation, similar to the manner in which cinema is supported, an incentive system for more news programmes on private TV stations and also collaborative partnerships.

> *Private and public*: The internet is leading to a fundamental change in the relationship between the media provider and the media consumer. The old broadcast model transmitted to an unknown, anonymous and random umber of recipients, whereas on the internet every recipient (who can always also be a transmitter) is known. This throws up fundamental data protection issues in respect of media policy. There is a not insignificant number of people who regard the question of who exercises digital control as the real issue of the future in any new media and network policy.

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