Future: Global Development in Media Uses and Effects

AXEL BRUNS
Queensland University of Technology, Australia

Unraveling the network of networks

Predictions of future developments are notoriously difficult, limited as they are by their authors' imaginations; writing this article at the start of the 2000s, for instance, few would have predicted the emergence and rapid rise to popularity of social media platforms such as Facebook, Instagram, Twitter, or Weibo. Therefore, this entry will focus on examining a number of key media trends that are current at the time of writing, and extrapolate these into the near future. Chief among these is the continuing, and still increasing, dominance of the Internet as the global technological backbone for communications. This may appear to be an obvious observation, but the extent of this dominance, and its effects for media and communications practices, remain underappreciated, and deserve greater scrutiny. By "Internet" this entry understands both the physical infrastructure of domestic and international network connections, and the transport and access protocols from TCP/IP to HTTP and beyond that are used to transmit and receive data and information across these networks—and here, it is likely that the future will bring further diversification of such technologies, and possibly also a greater enclosure of specific Internet spaces.

One of the founding myths of the Internet describes it as a "network of networks," ostensibly designed to withstand a nuclear attack or other major disruptions; the subnetworks comprising this network variously include broadband, narrowband, cabled, wireless, and satellite networks operated by governments, corporations, nonprofit organizations, end users, and others. These networks in turn support a wide range of content types and access protocols in a relatively nonselective fashion that deconstructs information of all types—text, image, video, interpersonal conversations, code, data—into standard data packets. That this ad hoc assemblage of technologies and content types works at all is due largely to the comparatively permissive approach that prevailed in the early decades of Internet development, which allowed major emerging Internet-based communication forms from email through the Web to streaming media to be established without significant political or commercial interference (Lessig, 1999).

But such openness and flexibility are now increasingly under threat, and are likely to be further undermined in the future, with significant effects for the range of Internet uses that remain permissible. In part, what emerges here is a struggle for ownership

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(and hence, control) of the Internet—a struggle that is likely to play out differently in different countries and regions, and in doing so threatens the universal accessibility and usability of the Internet itself. While early Internet infrastructure was largely owned and operated by government and nonprofit (for instance, scholarly) institutions that for the most part closely coordinated their operations, the rise of commercial Internet service providers (ISPs) since the 1990s—and especially the almost exclusively commercial provision of mobile Internet services by cellphone operators—has created an opportunity for such providers to separate their networks from those of their competitors, preference or hinder certain types of uses, or introduce proprietary features that are incompatible with other providers' networks (Economides, 2009). Initially, such attempts at erecting walled gardens were stifled by their detrimental aspects—the downsides outweighed the benefits. This may no longer hold as providers grow, create international alliances, and command a larger share of the global network; they may now be able to offer exclusive content or special features to attract users in spite of the limitations they also introduce.

The Internet that results from such technological reterritorialization may still be a network of networks—but the nature of such networking will have changed: Whereas the early Internet constituted a strongly federated assemblage of networks, it is gradually transforming into a looser alliance that, in an extreme case, could even see some sections break away entirely. The first step along that path is likely to be the decline of network neutrality: the principle that all data packets exchanged through Internet technology are to be treated equally, independent of content. Already, commercial ISPs in a number of developed nations have sought to challenge this principle, for instance in order to limit the use of file-sharing technologies or to privilege the services of popular streaming services such as Netflix or Spotify, and responses to such challenges have varied across different national jurisdictions; similarly, mobile providers regularly distinguish between different uses (such as calls, texts, Web access, streaming media, social media) in their pricing structures, even though current smartphones generally utilize the same TCP/IP transmission protocols for all these types of content. Arguably, for mobile Internet access, network neutrality never existed in the first place.

Elsewhere, significant striations within the overall network are created by the strong influence of national controls over Internet infrastructures and technologies. The pre-Arab Spring regimes of Gaddafi in Libya and Mubarak in Egypt both sought to contain and stifle emerging unrest by disconnecting their domestic networks from the global Internet. Internet access and content in China is tightly controlled (Zhang, 2006): All local Internet users must register with the state authorities; outside influences are selectively filtered on the basis of topic or source through the country's "Great Firewall"; global social networks such as Facebook and Twitter are blocked in favor of the ostensibly state-controlled Weibo; and even Weibo's user-generated content is closely policed by state censors. Most recently, in the course of its transformation of the country from Kemalist democracy to hardline autocracy (which has also seen a range of other attacks on the freedom of the press), the Turkish government has repeatedly sought to block access to social media platforms such as Twitter and to assume greater control over the country's Internet (Tufekci, 2014).

The success of such commercial and political interventions in network access and neutrality has been mixed. Other than in China, where government control of media and communication providers and technologies is nearly absolute, large numbers of users have tended to find ways to work around government interference and censorship: Libyan and Egyptian users utilized transnational connections to neighboring countries, especially through mobile devices, to maintain access to international media and communication platforms, while in Turkey the use of virtual private networks (VPNs) that generate connections to such platforms via censorship-free third countries continues to be prevalent (Tufekci, 2014). Such tactics for bypassing government restrictions have worked here largely because of these governments' comparatively inept attempts at controlling access; by contrast, the state apparatus concerned with censoring public expression is considerably more developed and powerful in China, and is thus almost inescapable using technological means. Instead, Chinese Internet users have sought to adopt subterfuge in the deliberate obfuscation of their meanings: The phrase "grass mud horse," for instance, is pronounced very similarly to a standard profanity whose use in an online posting may trigger censorship, and can substitute for it while enabling the user to maintain plausible deniability (Wang, 2012). Somewhat similar to Cockney rhyming slang in English, a wide range of such near-homophone terms are used by Chinese netizens to allow them to criticize aspects of Chinese Communist Party rule while protecting themselves from potential state repercussions; this has resulted in an ongoing arms race between slang inventors and state censors. However, here and elsewhere such user tactics for the evasion of state interference also tend to lead to a growing bifurcation of the online population into those who are able to utilize such technological or communicative means for bypassing censorship, and are thus able to participate in the free and open exchange of information and opinions, and those who are not, and must therefore rely on state-controlled media only. This resembles a situation in earlier decades where some citizens of autocratic or dictatorial states were able to access uncensored international media due to their proximity to the national borders, and others were not.

More generally, both commercial and political attempts to enclose and control Internet access and content are at risk of perpetuating and even motivating the very user practices they seek to control—especially when such interventions have the effect of disabling previously available activities. While calls for uncensored access to Western media may be rare in China in part because many users have never experienced such access in the first place, the backlash against Internet censorship in countries such as Egypt, Libya, and Turkey was so strong especially because it sought to take away a privilege that most users felt entitled to; similarly, commercial ISPs' attempts to constrain certain established practices (such as file sharing, or VPN access to services such as Netflix in countries where it is not officially available; see Lobato & Meese, 2016) have at times only heightened users' determination to circumvent the barriers now imposed on them. For this reason, it is likely that any transformation of local and global Internet structures away from the federated network model will proceed in a gradual fashion that avoids generating any major backlash from users.

One major driver in this development is likely to be the devices through which we access the Internet and online media. Already, the transition from desktop, cabled to mobile, wireless Internet access has provided an opportunity for mobile access providers to design their specific networks more strongly as walled gardens that communicate with the open Internet but are part of it only to a limited extent. Similarly, the emergence of a small number of major hardware and software technology frameworks (chiefly, iOS and Android and their associated hardware platforms) has led to a commercially motivated enclosure of these competing platforms as distinct from each other and supporting different user practices. In seeking to generate network effects that, for instance, encourage iOS users to remain loyal to the iOS platform—both by offering attractive iOS-only services and by making it more difficult to retain access when not using iOS—the providers of these platforms deliberately maintain incompatibilities between operating systems that had been thought to have become less important with our increasingly reliance on the Internet as a universal communications platform. It now appears possible that, rather than using the universality of Internet technologies as a driver for overcoming such incompatibilities, the increasing dominance of these platforms may come to undermine that universality itself. This may have a significant impact on possible media uses and practices.

Media transitions

If the focus of the discussion so far has been on the Internet and its future development, this is because, as noted above, the Internet now serves as the central backbone for global media and communications. It is important to point out in this context that this observation should not be used to support technologically determinist claims that see the Web and related technologies replacing all older media forms; indeed, older media are rarely if ever entirely replaced by newer media forms. Radio did not replace newspapers; television did not replace radio; YouTube did not replace television; even the greater quality and convenience of CDs and now music streaming services have failed to enable them to replace vinyl records, which are currently in resurgence. Rather, a number of older media forms have adapted and transitioned to new technological frameworks, especially where such frameworks are building on standard Internet technologies.

The media forms and industries that have already made such transitions include telephony (and especially mobile telephony), much of which is now transmitted in digitized form over Internet connections rather than as analog signals over dedicated separate networks; radio and television, which in many countries have transitioned from analog to digital broadcasting and which—in addition to online streaming—are broadcast through aerial transmitters only at the final, local stage, after network-based distribution to the transmission facilities; and print news, where content is captured and created digitally, transmitted digitally to distributed printing services, and—in addition to more or less equivalent online formats—delivered in analog, paper form only at the final stage. In each case, any remaining non-Internet, analog distribution tends to occur only at what is often described as the *last mile* of connection: over the copper wires that connect predigital home phones to the fiberoptic national network; over the airwaves

from broadcast tower to radio and TV receivers; and as newsprint on paper through newsagents and home delivery.

In the coming years and decades, it is likely that these remaining gaps in the digital transmission chain are gradually going to be closed as well. For instance, many nations have already seen a considerable decline in newspaper sales, in favor of the papers' online equivalents (e.g., Tiffen, 2015)—here, we may indeed see a physical format be largely replaced by its digital counterpart (but it should be noted that at the same time there may also be a growth in free, paper-based commuter newspapers in a number of countries). In spite of concerns to this effect among journalists, this transition should not be equated with a decline in popular interest in the news; journalism itself continues to remain important, even if its outputs are changing. Beyond this already considerably advanced transition, the continuing adoption of home broadband and mobile Internet services is similarly leading to the obsolescence of analog telephony; additionally, born-digital audio and video telephony services such as Facetime and Skype are displacing even the digitized services offered by conventional telephony providers. Finally, the availability of home and mobile broadband connectivity with sufficient bandwidth, and of Internet-enabled receiver devices, may even come to challenge the continued relevance of terrestrially broadcast radio and TV services. If radio and TV broadcasts are always also duplicated as livestreams, and if a substantial majority of the population in any one country is demonstrably able and willing to access such streams as replacements for aerial broadcasts, then few significant reasons remain for also continuing the terrestrial broadcasts; indeed, in comparison with on-request livestreaming to identified viewers, to continue to broadcast undirected radiowaves from such transmitters could be seen as an unnecessary waste of energy and as economically unjustifiable. From this perspective, indeed, it would be surprising if the coming decades did not see a number of terrestrial transmitters be decommissioned without replacement; further, the emergence of online-only secondary streaming channels—which can be observed for a number of public and commercial broadcasters across a range of developed nations—may constitute these broadcasters' first attempts at testing consumer acceptance of such nonterrestrial broadcast channels (Doyle, 2016).

In these examples it is already becoming obvious that the transition of existing media forms and practices to new technological contexts necessarily also holds the potential to considerably transform their formats and uses. Both as established media organizations adjust to the new frameworks and as the processes of transition create opportunities for new players to enter the industry, significant industry transformations as well as substantial changes to usage and consumption practices may occur. Such disruptions of existing equilibria between stakeholders in the industry, and their subsequent resolution as a new balance is established, are notoriously difficult to predict, because even minor factors can significantly affect the eventual outcomes—but a number of current challenges across a range of media industries offer valuable insights into the processes of change that are likely to unfold.

For example, major audiovisual content industries such as music, television, and cinema have experienced substantial disruptions at least since the emergence of early file-sharing software such as Napster (Wikström, 2013); for the most part, their attempts

to fight such unauthorized content distribution through punitive means and a condemnation of participating fans as "pirates" have helped only to increase the sophistication of the technologies used for such content sharing, and to create a stronger sense of community and cooperation among participants in such practices. File sharing undermined an industry model that was based largely on the distribution of physical products and on the staggered release of content across different geographic territories; it has forced affected industries to explore digital and simultaneous delivery mechanisms considerably more actively within a shorter period of time than they had appeared to be willing to do at first.

Yet, even under these circumstances, significant impetus for innovation has tended to arise not from within the established industry but through the entry of new, often speculatively funded operators that have combined elements of the user-generated, unsanctioned file-sharing model with sufficient industry nous to be able to establish themselves (eventually and not without struggling against industry objections themselves) as acceptable new players. Such operators include the freemium music streaming service Spotify and the subscription-based streaming TV and movie provider Netflix. Both remain controversial among the industry as well as fans: Spotify has been criticized for failing to sufficiently remunerate the artists whose work it streams (Marshall, 2015), while Netflix has long turned a blind eye to viewers who use VPN technology to gain access to its library from geographic locations where it is not yet officially available (Lobato & Meese, 2016). However, this also demonstrates these services' attempts to establish a new middle ground between the different stakeholders and to remain responsive to the changing use practices that new modes of access in a changing media environment make possible.

Similarly, the news industry's transition to online publishing as a major element of its operations has exposed it to new modes of usage and new types of competition. Arguably, the accessibility of individual news stories as distinct units of information on the Web, rather than packaged into a comprehensive newspaper or broadcast, has led to a decline in the importance of the organizational imprint and to an increase in the variety of news sources encountered by consumers. Further, the emergence of blogs and other forms of globally accessible user self-publication (Castells, 2007) has allowed for the emergence of citizen journalism as an alternative to the industrial journalism of established news organizations (Bruns, 2005). While such citizen journalism has largely remained highly limited in its resources, and thus its ability to cover the news, in aggregate it nonetheless constitutes a very substantial new source of information; some of the sites emerging from this field (such as Crikey, the Huffington Post, and OhmyNews) have also gone on to attract more substantial funding and establish themselves as serious, longer term operations.

The news industry's initial response was to dismiss this emerging competition as charlatan "armchair journalists" who produced low-quality, highly partisan content that could not compete with the outputs of quality journalism. Although perhaps justified for a large subset of all attempts at citizen journalism, such critiques could not account for the best and most widely read citizen journalism operations, and for the most part the industry has since accepted, albeit grudgingly, that citizen journalists do have a role

to play within the overall mediasphere; indeed, some leading citizen journalists emerging from the first decade of this movement have been accepted into the industry proper as contributors and commentators. Most recently, distinctions between industrial and citizen journalists—demarcated in the past not least by the online platforms on which they appeared—have been blurred yet further by the widespread adoption of leading social media platforms such as Facebook and especially Twitter as major spaces for the dissemination and discussion of news: Here, in these third spaces that are controlled neither by news organizations nor by citizen journalists, industrial journalists, citizen journalists, ordinary users, and other stakeholders in the news are able to mingle and interact freely, and it becomes difficult to ascertain at times whether they act in their respective official capacities or simply as individual users (Bruns, 2015).

"Big data" on media uses and effects

These current examples of media industry transformations—which are as yet far from reaching new equilibria—are instructive for any attempts to foresee future developments in media uses and effects. On the one hand, they demonstrate the fact that, in the course of an overall shift toward a more important role for the Internet in providing a technological framework even for already well-established media industries, ordinary Internet users and their uses of media content are also exercising a formidable influence on industry practices—arguably more so than they did in pre-Internet times, when user preferences and activities were felt rather less immediately and only in greater aggregate by industry actors. By contrast, users online are afforded greater agency: They are able individually as well as collectively to express their views and desires, and—where necessary—to develop alternative models that either bypass industry frameworks altogether or undermine them with tactical interventions (including the unauthorized access to and redistribution of content if necessary). Indeed, the examples from China, Egypt, Libya, and Turkey that were discussed above demonstrate that such user tactics may be directed against obstructive government stakeholders as much as against unresponsive industry players. In the triangle of relationships between government, industry, and citizens, the repositioning of citizens as potentially active, vocal users that has resulted from their greater access to the means of media production and distribution online has served to increase their negotiation power in relation to the other two stakeholders.

In particular, the impact of user actions on both government and industry is also enhanced by the increasing measurability of their activities. Predigital assessments of public opinion and customer behaviors—based on surveys, focus groups, opinion polls, and similar aggregate and extrapolated data—provide fairly crude measurements when compared to the in-depth profiling of user and customer attitudes and interests promised by the rise of "big data." The detailed digital trails left behind by Internet users in their day-to-day engagement with online content, and the rapidly increasing sophistication of the frameworks for capturing and assessing such data, mean that individual users' preferences can be profiled in extraordinary detail and that new demographic and postdemographic groupings can be constructed based

on observable activity patterns rather than standard sociodemographic divisions (Rogers, 2009).

Such approaches also raise a number of significant concerns and challenges, however. First, of course, there are significant ethical issues with the detailed profiling of individual users, especially if users themselves remain unaware of the fact that their activities generate these digital data trails and are thus also unable to provide or deny their consent for the use of their data. Ownership of these data remains a subject of dispute and has been addressed differently in different national and supranational jurisdictions; the European Union, for instance, has affirmed users' "right to be forgotten" by Internet content providers gathering such data (requiring the establishment of mechanisms to request the deletion of such data trails from internal databases), but especially in the transnational context of the Internet the enforcement of such rights remains difficult if not impossible (Rosen, 2012).

Second, the predominant focus on digital data sources in the emerging field of "big data" necessarily generates a lopsided picture of societal trends and practices that is substantially more detailed in its depiction of online than offline activities (boyd & Crawford, 2012). If used to inform industry or government initiatives without a full acknowledgment of this imbalance, the resulting initiatives may fail to adequately address the needs of those citizens whose activities and interests are not captured in online patterns—including particularly those already disadvantaged groups in society who are also less likely to participate online. Such blind spots in the digital data could be addressed by correlating digital data patterns more strongly with other data from offline sources, but this in turn could also further extend the already problematic personal profiling of Internet users by connecting their online and offline data.

In spite of these developments, "big data" on media uses and effects are likely to play an increasingly important role in informing industry and government activities in this field. A third concern that arises from this is that such tendencies may lead to an overly simplistic quest to satisfy quantitative metrics: In journalism, for instance, fears have already been raised that the tracking of user engagement with online content will drive a push to produce more search-engine-optimized content that draws casual readers to news sites (and thus generate advertising impressions and revenue, to the detriment of less popular, but qualitatively superior, content including political coverage and investigative journalism; Bruns, 2016). This so-called clickbait model is actively and openly pursued, in fact, by the websites of tabloid newspapers as well as by new, born-digital news sites such as Buzzfeed and Mashable.

The coming years are likely to see an increasing sophistication in the techniques for generating "big data" as well as in the analytical approaches to making sense of such datasets. Such advances may help to overcome the very simplistic readings of such data that remain predominant to date; but they do not in themselves help us to address the considerable ethical and privacy concerns that persist for these data sources. In spite of these concerns, however, the potential benefits of "big data" must also be stressed here: Understood correctly, these data do offer an opportunity to advance toward more thoroughly evidence-based decision-making processes in industry and government. Such potential is likely to be realized, especially when these data sources are combined with other forms of quantitative and especially also qualitative research; therefore, further

advances in media and communication studies that incorporate "big data" into existing methodological frameworks are urgently required.

New structures, new practices, new effects

Thus, especially online, but—because of the considerable and still increasing interweaving and convergence of newer and older media forms—also offline, new structures for media production and use are continuing to emerge. These involve traditional and comparatively well-understood stakeholders (media organizations, media regulators, media audiences) but also a range of new or transformed entrants: for instance, audience members turned active content creators; operators of media platforms such as Facebook and YouTube who do not actively create content but determine the conditions under which it is shared and used; and third-party services such as Google, which measure and direct user attention. The emergent and evolving sociotechnical structures that connect these stakeholders and shape their interactions may have a significant effect on society itself, which crucially depends on contemporary media in all their forms in order to be able to know itself.

First, there is reason to believe that the structure of information and interaction flows through media is closely interrelated with the structure of society itself. The comparatively unified mass media environment of the mid to late twentieth century supported the idea of a strong, society-wide public sphere in the classic Habermasian formulation (Habermas, 1989); the subsequent fragmentation of media channels through cable broadcasting, the Web, and social media may be seen as relating directly to a similar fragmentation of "the" public sphere into a multitude of smaller, more or less strongly overlapping publics, defined by identity or thematic similarities. This has significant potential implications for the functioning of society and democracy itself: Some fear that it could lead to an atomization of society itself, or at least to the formation of highly partisan, monocultural echo chambers that never come into contact with opposing viewpoints (Pariser, 2011). Others point out that personal identities are always multifaceted and engage in many overlapping publics; from this perspective, the echo chamber metaphor is too simplistic to accurately describe actual lived experience. Evidence for either claim remains inconclusive—but "big data" especially on everyday online interactions may help to document the extent to which an average user is exposed to multiple perspectives during the course of their day.

In this context, algorithms are being recognized as an especially important new mechanism of structuration (Gillespie, 2014). Especially online, algorithms (building on "big data" on user activity and media content patterns) are increasingly shaping the visibility and presentation of content, the likelihood of interactions between users, and thus potentially also the public perception of particular issues and topics. Further, such algorithms are usually proprietary, undisclosed, and perhaps even invisible. Google users will generally be aware that an algorithm is responsible for the search results that are returned for their queries, for example, but will not have a detailed understanding of the principles and assumptions built into its operations; Facebook and Twitter users may not even know that the newsfeeds they encounter on those social media platforms represent

an algorithmic selection of the updates deemed most "interesting" or "relevant" to them, rather than a complete list. Similarly, algorithms may suggest new persons, topics, or products that a user could be interested in, based on past behaviors; depending on their design, these mechanisms could entrench the "rich get richer" preferential attachment that is common to many personal-choice-based selection processes (Barabási & Albert, 1999), or they could choose to deliberately counteract it.

Such algorithms, and their deployment by various stakeholders, are therefore also inherently political. This is obvious where they affect conventionally political practices such as engagement with the news or participation in public debate: As search algorithms preferentially return mainstream perspectives, or social media news feeds privilege accounts with large follower bases, this may serve to further entrench majority views and to perpetuate a spiral of silence effect (Noelle-Neumann, 1974). But, beyond the narrow realm of organized, mediatized politics, similar algorithms can also have significant effects on the politics of the everyday: For instance, functions that suggest what social media accounts a user may follow, based on their existing connections and an aggregation of larger patterns in the overall userbase, may promote heteronormativity and ethnic homogeneity; functions that filter or promote content based on the preferences of a user's network of connections may undermine diversity and could eventually contribute to the emergence of true echo chambers.

Interested individuals and groups may in turn counteract such a shaping of information flows, through algorithms and other structural features, by reverse-engineering the algorithms and gaming the system. Variously, this has been attempted by including irrelevant keywords alongside the core content so that it appears in new contexts; by creating networks of "sock puppet" bots that give the appearance of wide popular support for a specific view; and by attempting to alter the algorithmic assessment of other users and topics so that they are featured less prominently or in inappropriate contexts. While this may succeed for specific issues, it can also reduce the quality of the algorithms' overall outputs, and may thus have broader negative effects; it also initiates an arms race between platform providers and activists that may result in an even stronger entrenchment of algorithmic selection without transparency and oversight.

Even in the absence of more extreme developments, this already has significant effects on both individual citizens and society as such. Especially as online and social media have also mediatized conventional social interactions to an unprecedented extent, individuals are now constantly also media producers and users—and often both at the same time, as produsers (Bruns, 2008); further, the ease of access to material on any topic (through search engines and social media) has also meant that, for many users, online sources are a, even *the*, principal source of information, from current events to practical advice on any aspect of life. The structural and algorithmic shaping of information availability and visibility as well as the diverse provenance of the information thus encountered create a considerable additional need for advanced information literacy, to enable the individual to critically assess and evaluate the material they encounter; this literacy, however, remains very unevenly distributed (Hartley, 2011). As a result, individuals are now highly dependent on third parties—which are often placed outside effective state regulation and rarely disclose

their quality-control procedures—to help them sort through and make sense of the vast amounts of information available.

This is deeply problematic across many realms of everyday life in society, but particularly so for processes of (political) opinion formation. A functioning democracy depends crucially on an informed citizenry; an informed citizenry depends on effective mechanisms for selecting and evaluating information that have traditionally been shared between citizens and the mainstream media. The emergence of the Web as an unstructured, open platform for posting and sharing information, and of third-party intermediaries to index and evaluate that information, coupled with the simultaneous decline and transformation of the conventional media industry, has profoundly disrupted these mechanisms and has enabled the creation of globally important channels for the circulation of information outside the control of conventional media, but also the unintentional or deliberate global dissemination of mis- and disinformation. This has enabled new, alternative voices both to enrich and to disrupt individual and societal processes of opinion formation.

Paradoxically, this supports claims of stronger as well as weaker media effects in this new, emerging media environment. On the one hand, the diversification of the media landscape, and the impact of algorithms on content selection, could be seen to create a series of echo chambers whose homogeneous communities of participants are exposed only to a very narrow selection of material that serves to reinforce and amplify their ideological beliefs. Increasing partisan divides in European and US politics, and the emergence of new political movements around specific new media platforms and practices, could be seen as evidence of such strong media effects tendencies. On the other hand, the same diversity of media, communities, and opinions, coupled with the multifaceted nature of personal identity, makes the complete subsumption of individuals within one community or movement an extreme case, and could instead be seen to ensure the individual's exposure to multiple divergent points of view, heightening the need for increased personal judgment. This case for weak media effects and strong personal agency may be supported, for example, by evidence of the increasing instability of established political systems, expressed not least in substantial fluctuations in the popularity of old and new party groupings from opinion poll to opinion poll and election to election in many democratic environments.

It should be noted that any such developments are not solely related to the impact of the Internet, of course. The trend toward a fracturing of the unified Habermasian public sphere began at least with the increase in cable channels in the 1980s, before the popular adoption of the Internet and the Web; the algorithmic selection and shaping of media content in response to user preferences and behaviors is arguably a product of advancements in market research in the same period, even if "big data" have now made such research substantially more powerful still. In this light, citizens have needed critical media literacies well before they themselves began to contribute to content creation through "mass self-publishing" (Castells, 2007). But these developments have accelerated to even greater speeds in recent years, and show no sign of slowing down.

SEE ALSO: Diffusion Theories: Logic and Role of Media; Diffusion Theories: Media as Innovation; Digital Divide: Impact of Access; Human–Computer Interaction; Interactivity; Media Use: China; Multistep Flow of Communication: Network Effects; Multistep Flow of Communication: Online Media and Social Navigation; Network Society: Networks, Media, and Effects; Political Economy of Media Effects; Social Context of Media Use

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Axel Bruns is an Australian Research Council future fellow and professor in the Digital Media Research Centre at Queensland University of Technology, Australia. He is the author of *Blogs, Wikipedia,* Second Life *and Beyond: From Production to Produsage* (2008) and *Gatewatching: Collaborative Online News Production* (2005). He is also an editor of the *Routledge Companion to Social Media and Politics* (2016), *Twitter and Society* (2014), *A Companion to New Media Dynamics* (Wiley-Blackwell, 2012), and *Uses of Blogs* (2006). His current work focuses on the study of user participation in social media and its implications for our understanding of the contemporary public sphere.