

# Media Convergence \*

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Convergence is an ambiguous term used by various disciplines to describe and analyse processes of change toward uniformity or union. Its application in the communications sector, often referred to as media convergence, also encompasses valuable approaches and insights to describe, characterize and understand the digital creative economy. A certain amount of fuzziness combined with the broad, multipurpose-character of convergence leads both to a general and a wide range of very specific understandings of the convergent communications sector. This sector substantially overlaps with the digital creative economy, which is also characterized by a degree of vagueness. Common sub-sectors and subjects between communications and digital creative industries such as broadcasting, publishing, advertising, music, film and games are even growing because of convergence. Beyond that, the consequences of media convergence are also discussed for other parts of creative industries, such as museums, libraries and design in particular. New digital media technology and services are considered as central drivers of creative industries. Altogether, this makes studies of media convergence, both its approaches and results, highly relevant for the understanding of the digital creative economy.

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## **Various disciplines and subjects**

For centuries, concepts of convergence have been used in various academic disciplines to describe and analyse manifold processes of change. Like other analytical concepts, the term convergence was first used in the natural sciences and then introduced to the social sciences and humanities. In the social sciences, various disciplines use the concept of convergence to describe different phenomena. The term is applied, for example, in political science to the convergence of political systems, especially of the western capitalist system and the eastern socialist one. In technology research, the approximation and fusion of nano-, bio- and information technologies with the cognitive sciences is called NBIC-convergence, or converging technologies. In communications research, the concept of convergence is employed to analyse different sorts of blurring boundaries. Research into the growing uniformity between the programming of public and commercial broadcasters in dual-order models, for example, is discussed as convergence, as are transformations in national media systems in general, focusing on whether they are becoming more similar (Kleinsteuber, 2008). Further, convergence refers to the blurring of boundaries between media, more precisely the blurring of the traditional demarcation between telecommunications (point-to-point) and the mass media. This is identified in this chapter as the core piece and meaning of convergence. In addition, in the telecommunications policy debate, the integration of wired and wireless communications is called convergence. The process of blurring boundaries between sub-sectors of communications is also central to the formation of a digital creative economy, and it has a crucial effect on various of its sub-sectors, thus making convergence concepts even more interesting to an understanding of this formation process.

Another common feature of media convergence is the interdisciplinarity of its research topics, which also holds true for the digital creative economy. The strength and at the same time the weakness of convergence is its fuzziness and its multipurpose-character, which it shares with

other successfully and widely used terms that bridge disciplinary discourses and research, for example the term ‘governance’ (Schuppert, 2005; Schneider, 2012).

### **Different perspectives and functions**

Convergence is not only used and discussed in academia but also by policy-makers and the industry, however, with differing objectives, interests, definitions and accentuations. For the industry, convergence is predominantly a strategic objective and a business challenge. For policymakers it is a policy goal and challenge. For academics it is mainly an analytical concept applied to understand and explain important aspects of media change in general and numerous detailed developments in particular.

Concepts of convergence fulfil different purposes and functions. They provide the analytical framework for various aspects of change, and bridge different disciplinary discourses of the subjects involved. They explore the big picture of change but also very detailed parts of it. By doing so, they integrate conflicting processes of convergence and divergence as two sides of the same phenomenon (Pool, 1983; Jenkins, 2006). In other words, concepts of convergence embrace both blurring traditional boundaries between old media and novel diversification and differentiation of new media. Convergence as a metaphor has the function of simplifying the complexity of media change. It fits nearly all aspects of digital media development, and it is also used as a ‘rhetorical tool’ to convince stakeholders of certain reforms (Fagerjord and Storsul, 2007).

The industry has been discussing the inevitability and desirability of convergence of telecommunications and broadcasting since the 1980s. In telecommunications circles, the pursuit of strategic objectives due to convergence has taken place more intensively than in media circles. Even three decades ago, the telecommunications industry had high hopes for integrated ISDN broadband networks and fibre-optic technology as central infrastructure for the convergent communications sector (Garnham and Mulgan, 1991), hopes which have only

in part been fulfilled. Media representatives were more reserved in their interpretation of the convergence trend, equating it with deregulation or commercialization, and occasionally gave the impression that convergence exemplifies a hostile takeover by telecommunications (Latzer, 2009).

In the policy field convergence became a hot topic for international organizations such as the OECD, ITU and WIPO, for nation states, and on the supranational level for the European Union as of the 1990s. Initially it was also discussed as a collision between the worlds of telecommunications and broadcasting, which had very different corporate and political cultures. Accordingly, in 1992 the OECD raised the significant question of whether this really was convergence or a collision between the two sectors (OECD, 1992). The EU officially took the issue up in 1997, with the Green Paper on the convergence of the telecommunications, media and information technology sectors, and the implications for regulation (COM(97)623). Harmonization and liberalization of the national European telecommunications sectors started in the mid-1980s and was largely accomplished within a decade. With convergence, the EU then embarked on another explosive reform topic, which was even more complex than the liberalization debate, and resulted in convergence-related institutional reforms at the supranational level. For example, political competencies for telecommunications and broadcasting were integrated in the Directorate General for Communications Networks, Content and Technology (Latzer, 2013a). On the national level, policymakers likewise took up the convergence topic, focusing on regulatory consequences in particular.

Since the 1980s, communications research, too, has concerned itself with the characteristics and possible consequences of the convergence trend (Pool, 1983; Baldwin et al., 1996; Latzer, 1997, 2009; McQuail and Siune, 1998; Marsden and Verhulst 1999; Bohlin et al. 2000; Storsul and Stuedahl, 2007; Drucker and Gumpert, 2010). The resulting literature covers a wide range of topics and approaches, from technological and economic aspects of

convergence to political and socio-cultural features, which are outlined as levels of convergence below.

In the 1990s, industry, politics and research together made convergence one of the central buzzwords in the communications field and beyond, alongside and often combined with digitization, liberalization and globalization. With the rapid proliferation of Internet-based services, especially with Web 2.0, digital TV, social media and wireless communication, the convergence phenomenon has attracted even more attention since the beginning of the 21st century.

### **Blurring boundaries between telecommunications and media**

The beginnings of research on media convergence (Pool, 1983) and the subsequent large bulk of the convergence literature concentrate on the process of blurring lines between individual and mass communication. It focuses on the convergence of modes of communication and the blurring of boundaries between traditional media and their sub-sectors in the communications sector. More precisely, convergence between telecommunications and the traditional mass media, in particular with broadcasting is analysed.

From an analytical point of view it is helpful to conceptualize the blurring of boundaries between telecommunications and mass media narrowly as the core piece and meaning of media convergence. Furthermore, as convergence continues and is even increasingly used as a buzzword for talking about a very wide range of phenomena and changes, its time-dimension should be considered. It is neither an endless nor a steady process, as is sometimes misleadingly implied, but a temporary one. It peaked at the end of the 20<sup>th</sup> century, even though there are significant offshoots for communications and the digital creative economy well into the 21st century. For example, such implications of convergence include the proliferation and application of Internet-based services throughout the economy. These offshoots should not be mistaken for the core element of a narrowly defined convergence. The

bursting of the Internet bubble around the turn of the millennium slowed the process down in the short term but did not halt it. Further, such a time-sensitive perspective on convergence, and the distinction between a core process and its offshoots, does not support the notion that every single consequence of media convergence is to be a transformation towards unity and uniformity.

In other words, it would overstretch the concept of media convergence to expect that every future implication associated with the blurring of boundaries between media will go in the direction of uniformity. Central convergence processes towards uniformity have already happened at the end of the 20th century, and stakeholders are still struggling with their consequences, which have disrupted business and regulatory models, strategies, classifications and laws that have been used for decades in politics, the economy and in research. Not surprisingly, the media convergence process is followed by divergence processes as well, by novel differentiations within the convergent communications sector. In any case, there is no way back to the old structures. Changes by convergence can primarily be considered as structural change, with wide-ranging second-level effects for content and creativity (Potts, 2011; Kolo, 2010). Pace, intensity and details of change vary between countries, depending on different starting positions and peculiarities of national communications systems and structures.

Seen historically, the 20th century communication sectors, which were nationally organized and essentially characterized by more or less universal distinctions between telecommunications and mass media, formed the starting point for media convergence. The commercial use of telegraphy and telephony began in the second half of the 19th century and became known as the telecommunications sector. The broadcasting sector established itself commercially a few decades later and was classified together with the press as part of the media sector. These two sub-sectors – telecommunications and the media – used different technologies and separate networks. They were run by different companies, there were

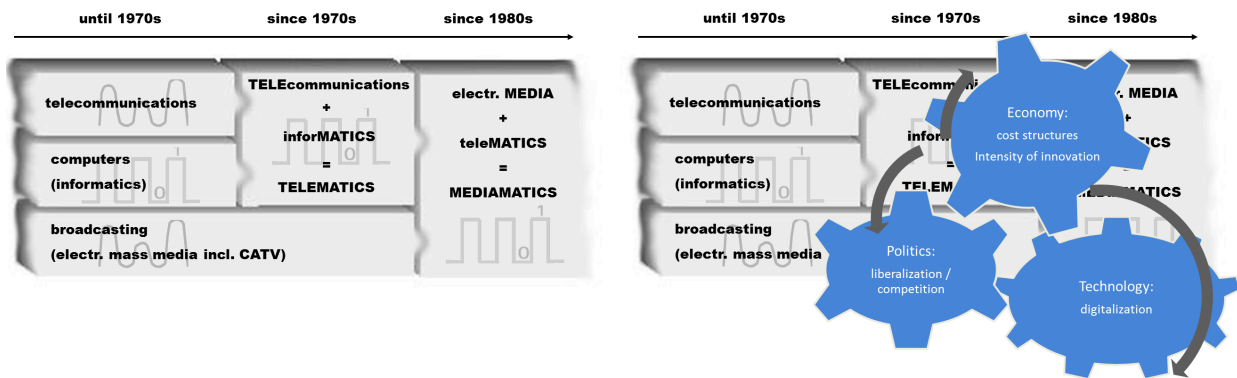
distinct political competences, separate regulatory agencies and legal foundations and they had different underlying regulatory models (Latzer, 2009).

By the end of the 20th century this technology-oriented subdivision into media and telecommunications, into mass communication and individual communication was crumbling. Traditional categorizations, analytical frameworks, separate regulatory bodies and regulatory models for telecommunications and the mass media were challenged, driven by a combination of digitization, mobile communications, the Internet and digital television.

As the difficulty of classifying the online communication sector shows, the result of the convergence of telecommunications and broadcasting is more than just the sum of its parts. The way the trend is formulated conceptually and terminologically varies depending on the research perspective. The result of convergence is variously described as multimedia, TIME (telecommunications, information technologies, media, entertainment) or cross-media, emphasizing its media-overlapping character.

From a structural perspective, convergence changes the techno-social, societal communication systems towards mediamatics (Latzer, 1997). It is the computer sector that connects the previously separate sub-sectors of telecommunications and the mass media. This process has gone through two main stages, starting at the end of the 20<sup>th</sup> century (see figure 1). In a first step, data communication and the digitization of telephony marked the arrival of computer technology (inforMATICS) into TELEcommunications, which was coined as telematics (Nora and Minc, 1978). This was followed by the convergence of the likewise digitalized mass MEDIA with teleMATICS toward an integrated societal communications system called mediamatics (Latzer, 1997). The literature on media convergence is mainly concerned with this second stage. The convergence process was co-evolutionary, i.e. its direction and pace were determined by the reciprocal interplay of technological innovations, corporate strategies, political-legal reforms and changes in media reception patterns as sketched in a simplified manner in figure 1.

Figure 1: Co-evolutionary convergence steps in electronic communications



Note: The impact of convergence in communications is not limited to the electronic sub-sectors shown in figure 1, but, for example, also affects the press sector.

### Levels and implications of convergence

It follows that convergence is taking place at different levels. The numerous terms, definitions and classifications used in the literature can be summarized in four categories: technological, economic, political and socio-cultural convergence. Because of overlaps with the communications sub-sectors and structural similarities, all of these are instructive for the understanding of the digital creative economy as well.

*Technological convergence* is playing a leading role. It stands for a universal digital code across telecommunications and electronic mass media, for common protocols (IP), which are used for different technological (hybrid) platforms/networks (fixed-wire and mobile) and lead to service-integrating devices, such as TV-capable smart phones. These changes are also referred to as network convergence and terminal convergence (Storsul and Fagerjord, 2008). Digitization is one important part of the convergence phenomenon, one of its enabling factors, characteristics and driving forces. Despite its importance, however, it would be inappropriate and misleading to reduce convergence to technological convergence alone, as is often done. Above and beyond this, it should not be combined with naïve expectations of an all-embracing uniform medium, of future households with only one network or one terminal per person for all communications purposes. To the contrary, convergence creates better technical



and economic conditions for a plurality of integrated networks, services and terminals.

Technologically, it creates a digital modular construction system (Latzer, 1997), which offers great flexibility for innovatively assembled services, and economically it lowers the cost compared to analogue, electromechanical technology. Convergence leads to increased flexibility on the supply side, and hence to increased product variety as the previously rigid combination of technology and content is dissolved.

Combined with technological convergence there is *economic convergence* in the communications sector (Wirth, 2006). This includes market convergence on the meso- and macro-level and corporate convergence, characterized by new business models, and organizational change within companies at the micro-level. Market convergence raises important questions: How should relevant markets be defined, for instance for integrated broadband networks? Does convergence lead to increased competition because products converge in substitutes and compete with each other, or does it lead to reduced competition, because products converge in complements, which implies more cooperation? (Greenstein and Khanna, 1997)

Further economic topics (Wirth, 2006) include: the transformation from traditionally vertical businesses such as television and telephony to horizontal segments such as content production, packaging and transmission; the impact of convergence on mergers and acquisition strategies (Chan-Olmsted, 1998); the implications for strategic management; and the consequences for demand. For example, in what is described as triple play, corporate convergence has led to the same companies now being active in telecommunications, broadcasting as well as on the Internet. If fixed and mobile telephony are included, this becomes quadruple play. Following core businesses such as search engines (for example Google) and electronic trading (for example eBay), new kinds of convergence enterprises are emerging. Traditional media and telecommunications companies, including public broadcasters, are changing to new business models, which is further combined with internal

reorganizations. Press and television companies are good examples (Killebrew, 2005). Their current dilemma is basically that old business models no longer work, and readymade, tested new ones are not yet available. An example of organizational convergence is the experimentation with integrated multimedia newsrooms, which, in a next-level effect, calls for changes regarding qualifications and skills. Ultimately, all of these structural changes have an impact on the product, on the quality of the content produced, with ramifications for public communication in national and supranational communications systems in general.

*Political convergence* is mainly discussed as policy and as regulatory convergence. The traditional policy model, with its fundamental division into telecommunications and the mass media came under pressure. While the industry proceeded quickly into the convergence era, policy-makers and researchers remained largely stranded in the traditional separation of telecommunications and the media. Policy convergence discusses the transformation from traditionally separate telecommunications and media policies towards one national or supranational communications policy (Cuilenberg and Slaa, 1993; Latzer, 1998). This overlaps with regulatory convergence, which reflects integrated regulatory agencies and laws for the convergent communications sector. Alongside obsolete demarcations, convergence means that new regulatory responsibilities are emerging or growing in importance (Bohlin et al, 2000; Drucker and Gumpert, 2010), including the protection of intellectual property, freedom of speech and the regulation of domain-name systems. Further, the challenge of balancing socio-cultural and economic regulation increases with the blurring boundaries between media.

After a period of unrest caused by convergence, a dominant new design of governance for convergent communications market is becoming apparent, which constitutes major building blocks for worldwide reforms (Latzer, 2009). Constituent components include integrated political strategies for telecommunications, the Internet and the media; integrated control structures (regulatory authorities) and laws for the convergent communications sector; a

technology-neutral, functional taxonomy; a subdivision into transmission and content regulation; and a growing reliance on alternative models of regulation such as self- and co-regulation.

*Socio-cultural convergence* is also discussed as rhetorical, cultural, socio-functional, receptional and spatial convergence, and as convergence culture. All of these aspects are closely linked to the digital creative economy. The media can be conceived of as being constituted by technology and social/cultural practice. Research on socio-cultural convergence focuses on changes in social practice, phenomena such as transmedia storytelling, content and genres that are used across channels and platforms. Rhetorical convergence focuses on language and refers to the creation of new genres by remixing traits of genres of different media (Fagerjord and Storsul, 2007). Under the term convergence culture (Jenkins, 2006), academics discuss the impact of convergence on popular culture with consequences on how we learn, connect and work, the change towards a stronger participatory culture, the transformation from audience to ‘prosumers’, the co-production of media texts by integrating user-generated content and collective intelligence. The consequences of convergence are thus not only top down but also driven from the bottom up.

Cultural convergence, understood as the impact of convergence on media culture, is also of interest from a media-economic point of view (Wirth, 2006). Research focuses on: the repurposing of existing media content; cross-media formats; managerial challenges of convergence in newsrooms; changing working conditions through convergence in the newsroom; multi-skill requirements; the redesign of content; and the impact on creativity in changing workplaces (Killebrew, 2003).

It has also become apparent that, in the form of socio-functional convergence, telecommunication is now increasingly used in the private-entertainment sector and that broadcasting is used for business communication (for example internal corporate business TV). Demand-side analyses of convergence examine the way in which the media time-

budgets, the daily routines, leisure activities and job profiles are changing (Oehmicher and Schröter, 2000). There have been shifts, substitutions and combinations in the way services are used – which is also known as receptive convergence, as it concerns the change in reception patterns and a convergence of usage patterns (Höflich, 1999). Finally, there is spatial convergence, which refers to the globalizing effect of rapidly growing cross-border services and uniform technology (Latzer, 2009).

### **Co-evolutionary perspective**

Convergence is addressed from a variety of theoretical perspectives. A co-evolutionary approach is particularly useful to deal with the interdependencies of different levels of convergence as described above (see Figure 1), to draw different conclusions regarding the implications of the convergence phenomenon, and to adequately deal with the underlying complexity and evolutionary character of media change and the convergence phenomenon. Thus it strengthens a scientific foundation which is more appropriate for dealing with the specific attributes of the research subject. (Latzer, 2013b, c)

Media change in general and convergence in particular can be conceived of as innovation-driven, co-evolutionary processes in a complex environment. Innovations that are analysed as co-evolutionary, adaptive cycles of renewal are the nucleus of change. They are the central driving forces of dynamic developments in communications and the digital creative economy. From an evolutionary economic perspective, creative industries are not only the outcome of innovations. With an infrastructure role, creative industries also contribute to the origination, adoption and retention of new technologies in open complex innovation systems (Potts, 2011). Convergence is driven by different kinds of innovations, as reflected in the different levels of convergence. Reciprocities between these different levels are of particular importance. A co-evolutionary approach takes into account the interdependencies of technological, economic, political and socio-cultural convergence processes (innovations),

and by doing so leads to additional insights and different implications for political and corporate strategies. While evolution can be characterized as design without a central designer, co-evolution means to design and being designed at the same time. Alternative terms are co-construction or confluence (Benkler, 2006). These concepts overcome the long and fierce debates about technological and social determinism in the literature on media change and convergence.

A co-evolutionary approach to the Internet, a system that is both central to change in communications and the digital creative economy, provides a good example. This perspective presents the Internet as a complex, adaptive system, characterized by non-linear developments, emergence and decentralized structures. It explains the interplay – more precisely, the mutual selective pressure and adaptive behaviour – of technology, organization and business models that nurture each other (Beinhocker, 2006). Coincidences are included in these developments as another constitutional characteristic. Co-evolutionary processes can be found, for example, in the World Wide Web (WWW), where the simple web behaviour of individuals – who are not centrally controlled – leads to an emergent, unforeseeable, complex behaviour of the total, self-organized WWW social system. There is also a co-evolutionary relation between the search engines and the link structure of the web, which altogether results in an adaptive behaviour of the WWW social system (Mitchell, 2009).

The co-evolutionary approach highlights not only the content of the Internet but, in combination, its infrastructure. Thus the Internet is best described as a modular, open system with an end-to-end-design that allows innovations at every node of the network, in other words, by any user. Altogether, this offers great flexibility and scope for innovatively assembled services. In this way the previously rigid combination of technology and content is dissolved.

To sum up, the Internet is a modular construction system, essentially an innovation machine. This co-evolutionary perspective leads to various implications for political and corporate

strategies. It provides a different conceptual framework. Compared to other approaches, the predictability and controllability of developments are much more limited, leading to different conclusions on the role of the state regarding policy guidelines and corporate strategies. For example, more adaptive policies are used – including feedback-loops such as periodic review processes – and trial-and-error methods are increasingly applied (Latzner, 2013b).

Co-evolutionary models are in particular applied for the analysis of complex systems. One of their characteristics is emergence, that is the unforeseen formation/appearance of new structures and characteristics in a system that are not directly derivable from existing, old characteristics. The convergent communications sector and the digital creative economy can both be considered as emergent phenomena. The result is more than the sum of its parts, and cannot be simply understood in terms of those parts. A convergence analysis from a co-evolutionary perspective therefore promises additional interesting insights. The co-evolutionary approach not only contributes to the scientific foundation of an analytically sound convergence concept in the narrow sense but also provides the theoretical basis to better understand the various offshoots of convergence in a wide sense. While convergence in a narrow sense is well-suited to analyse changes of already existing parts, co-evolution and complexity approaches are also helpful to explain the ‘new’, the outcome and implications of convergence for various (other) parts of society.

## **Conclusions**

The relevance of the concept of media convergence for the understanding of the digital creative economy stems from structural similarities and growing overlaps with convergent communications markets. New digital media are the outcomes of convergence, and they are central drivers of the digital creative economy. Various stakeholders use convergence concepts to convey different aspects of media change. A narrow definition of convergence concerns the blurring of boundaries between traditional sub-sectors of communications.

Broader definitions of convergence, especially those that do not consider its time dimension, narrow its merit as analytical concept, basically because of growing vagueness and less reference to the core piece and mechanisms of convergence. Convergence-induced changes in communications and the digital creative economy are driven by the interplay of technical, economic, political and socio-cultural factors. A co-evolutionary approach takes growing complexity and interplay into account. It compensates for a general weakness of the narrow convergence concept, which is strong in the analysis of the 'old' converging parts but weak in the explanation of the emerging 'new', for example on implications of the Internet throughout the economy. A combined co-evolutionary and complexity perspective sketches, among other things, the outcome of convergence, the formation of a transformed societal communications system. Convergence can be understood as an innovation-driven, co-evolutionary process in a complex environment. It is a process of structural change with a wide range of implications for content and creativity. Concepts of convergence provide the big picture but also allow for detailed analyses throughout the digital creative economy.

## **References**

- Baldwin, T. F., S. D. McVoy and C. Steinfield (1996), *Convergence: Integrating Media, Information and Communication*, London: Sage.
- Beinhocker, E. (2006), *The Origin of Wealth*, London: Random House.
- Benkler, Y. (2006), *The Wealth of Networks*, New Haven: Yale University Press.
- Bohlin, E., K. Brodin, A. Lundgren and B. Thorngren (eds) (2000), *Convergence in Communications and Beyond*, Amsterdam: Elsevier.
- Chan-Olmsted, S. M. (1998), 'Mergers, acquisitions, and convergence: The strategic alliances of broadcasting, cable television, and telephone services', *Journal of Media Economics*, 11, 33-46.

- Cuilenberg, J. van, and P. Slaa (1993), 'From media policy towards a national communications policy', *European Journal of Communication*, **8** (2), 149-176.
- Drucker, S. J., and G. Gumpert (eds) (2010), *Regulating convergence*. New York (a.o.): Peter Lang.
- European Commission (COM) (1997), 'Towards an Information Society Approach. Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation. COM (97) 623 final, 3 December 1997'. Available at [http://aei.pitt.edu/1160/01/telecom\\_convergence\\_gp\\_COM\\_97\\_623.pdf](http://aei.pitt.edu/1160/01/telecom_convergence_gp_COM_97_623.pdf) (accessed 27 August 2012).
- Fagerjord, A. and T. Storsul (2007), 'Questioning Convergence', in T. Storsul and D. Stuedahl (eds) (2007), *Ambivalence towards convergence. Digitalization and Media Change*, Göteborg: Nordicom, pp. 19-31.
- Garnham, N., and G. Mulgan (1991), 'Broadband and the Barriers to Convergence in the European Community', *Telecommunications Policy*, **15** (3), 182-194.
- Greenstein, S. and T. Khanna. (1997), 'What does industry convergence mean?', in D. B. Yoffie, (ed), *Competing in the age of digital convergence*, Boston: Harvard Business School Press, pp. 201-226.
- Höflich, J. R. (1999), 'Der Mythos vom umfassenden Medium. Anmerkungen zur Konvergenz aus einer Nutzerperspektive', in M. Latzer et al. (eds), *Die Zukunft der Kommunikation, Phänomene und Trends in der Informationsgesellschaft*, Innsbruck, Wien: Studien Verlag, pp. 43-60.
- Jenkins, H. (2006), *Convergence Culture. Where old and new media collide*, New York and London: New York University Press.
- Killebrew, K. C. (2003), 'Culture, creativity and convergence. Managing journalists in a changing information workplace', *International Journal on Media Management*, **5** (1), 39-46.



- Killebrew, K. C. (2005), *Managing Media Convergence. Pathways to Journalistic Cooperation*, Oxford and Victoria: Blackwell.
- Kleinsteuber, H. J. (2008), 'Convergence of Media Systems. The International Encyclopedia of Communication'. Donsbach, W. (ed). Blackwell Reference Online. available at [http://www.communicationencyclopedia.com/subscriber/tocnode?id=g9781405131995\\_yr2012\\_chunk\\_g97814051319959\\_ss39-1](http://www.communicationencyclopedia.com/subscriber/tocnode?id=g9781405131995_yr2012_chunk_g97814051319959_ss39-1) (accessed 20 July 2012).
- Kolo, C. (2010), Online Medien und Wandel: Konvergenz, Diffusion, Substitution, in W. Schweiger and K. Beck (eds), *Handbuch Online Kommunikation*, Wiesbaden: VS Verlag, pp. 283-307.
- Latzer, M. (1997), *Mediamatik: Die Konvergenz von Telekommunikation, Computer und Rundfunk*. Opladen: VS Verlag für Sozialwissenschaften.
- Latzer, M. (1998). 'European Mediamatics Policies. Coping with Convergence and Globalization', *Telecommunications Policy* **22** (6): 457-466.
- Latzer, M. (2009), 'Convergence revisited: Toward a Modified Pattern of Communications Governance', *Convergence: The International Journal of Research Into New Media Technologies*, **15** (4), 411-426.
- Latzer, M. (2013a), Convergence, Co-evolution and Complexity in European Communications Policy, in K. Donders, C. Pauwels and J. Loisen (eds.), *Handbook on European Media Policy*, Houndmills: Palgrave Macmillan, forthcoming.
- Latzer, M. (2013b), Towards an Innovation-Co-evolution-Complexity Perspective on Communications Policy, in S. Pfaff and M. Löblich (eds), *Media and Communication Policy in the Era of the Internet and Digitization (working title)*, Baden-Baden: Nomos, forthcoming.
- Latzer, M. (2013c), 'Medienwandel durch Innovation, Ko-Evolution und Komplexität. Ein Aufriss', *Medien & Kommunikationswissenschaft*, 2013 (2), forthcoming.
- Marsden, C. T. and S. G. Verhulst (eds) (1999), *Convergence in European Digital TV Regulation*. London: Blackstone Press.

- McQuail, D. and K. Siune (eds) (1998), *Media Policy: Convergence, Concentration and Commerce*, London, Thousand Oaks, New Delhi: Sage.
- Mitchell, M. (2009), *Complexity. A Guided Tour*, Oxford (a.o.): Oxford University Press
- Nora, S. and A. Minc (1978), *L'informatisation de la société*. Paris: La Documentation Française.
- Oehmichen, E. and C. Schröter (2000), 'Fernsehen, Hörfunk, Internet: Konkurrenz, Konvergenz oder Komplement?', *Media Perspektiven*, 8, 359-368.
- OECD (1992), *Telecommunications and Broadcasting: Convergence or Collision?* Paris: OECD.
- Pool, I. d. S. (1983), *Technologies of Freedom*, Cambridge: Belknap Press.
- Potts, J. (2011), *Creative Industries and Economic Evolution*, Cheltenham: Edward Elgar.
- Schneider, V. (2012), Governance and Complexity, in D. Levi-Faur (ed.), *Oxford Handbook of Governance*, Oxford: Oxford University Press, pp. 129-142.
- Schuppert, G. F. (ed) (2006), *Governance-Forschung. Vergewisserung über Stand und Entwicklungslinien*, Baden-Baden: Nomos.
- Storsul, T.,D. Stuedahl (eds) (2007), *Ambivalence towards convergence. Digitalization and Media Change*, Göteborg: Nordicom.
- Storsul, T. and A. Fagerjord (2008), 'Digitization and Media Convergence. The International Encyclopedia of Communication' in W. Donsbach (ed). Blackwell Reference Online.  
available at  
[http://www.communicationencyclopedia.com/subscriber/tocnode?id=g9781405131995\\_yr2012\\_chunk\\_g97814051319959\\_ss39-1](http://www.communicationencyclopedia.com/subscriber/tocnode?id=g9781405131995_yr2012_chunk_g97814051319959_ss39-1) (accessed 20 July 2012).
- Wirth, M. O. (2006), 'Issues in media Convergence', in A. B. Albarran, S. Chan-Olmsted and M. O. Wirth (eds.), *Handbook of Media Management and Economics*, Mahwah NJ: Lawrence Erlbaum Association, pp. 445-462.

### **Further reading**

See Pool (1983) for an early and basic convergence concept and its impact on political culture. Wirth (2006) provides a systematic literature review on various aspects of economic convergence. Latzer (2009) focuses on governance issues resulting from political-regulatory convergence. Bohlin et al. (2000) as well as Drucker and Gumpert (2010) provide insights in the multitude of policy and regulatory challenges. Storsul and Stuedahl (2007) and Jenkins (2006) discuss a wide range of socio-cultural convergence issues. The academic journal *Convergence: The International Journal of Research into New Media Technologies* keeps track of current debates regarding convergence.