

ONLINE JOURNALISM AND THE PROMISES OF NEW TECHNOLOGY

A critical review and look ahead

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The research on online journalism has been dominated by a discourse of technological innovation. The “success” of online journalism is often measured by to what degree it utilizes technological assets like interactivity, multimedia and hypertext. This paper critically examines the technologically oriented research on online journalism in the second decade of its existence. The aim is twofold: First, to investigate to what degree online journalism, as it is portrayed in empirical research, utilizes new technology to a greater extent than before. Second, the paper points to the limitations of the technologically oriented research and suggests alternative research approaches that to a greater extent might explain why online journalism develops as it does.

KEYWORDS hypertext; interactivity; Internet technology; multimedia; online journalism

Introduction

Whenever new technology expected to play a major role in the evolution of media comes around, researchers, scholars, business executives and practitioners alike all participate in a game of revolution prophesying. Mosco (2004) argues that the entry of such new technologies always has been surrounded by myths about their revolutionary powers. The telephone, the radio, television and the computer were all surrounded by mythical pronouncements on how they would cause “the end of history, the end of geography and the end of politics” (2004, p. 13). Needless to say, these technological inventions did change the world dramatically, but not in such a quick and radical fashion the fortune-tellers seemed to believe.

Similar myths dominated the introduction of the Internet, and the research into online journalism was not left untouched. The 1990s saw several publications predicting for instance “the end of journalism” (Bromley, 1997; Hardt, 1996) due to the implementation of digital technology, while others, like Pavlik (2001), were profoundly optimistic on behalf of the future of journalism in new media. According to Boczkowski (2004) and Domingo (2006), these first online journalism analysers were driven by technological determinism. Domingo argues that the research of online journalism the first decade of its existence was partly paralyzed by what he labels “utopias of online journalism” (2006, p. 54). These utopias were especially related to how

hypertext, multimedia and interactivity would foster innovative approaches that would revolutionize journalism. Domingo labels these normative investigations the first wave of online journalism research. He then argues that the following research of online journalism falls into two new waves: A descriptive and empirical wave of research focusing on to what degree the wonders of new technology described by the first wave researchers actually materialized; and a wave of research that takes a constructivist rather than a technological determinist approach to researching online journalism.

However, this third wave of online journalism research is still just a small ripple compared to the “tsunami” of research embarking on a technological approach that has continued to flood the literature on online journalism. Moreover, many of the studies labelled by Domingo as constructivist research is in fact dominated by an initial desire to investigate the impacts of technology on online journalism. In this paper I will critically assess the contributions of this “techno-approach” to research on online journalism. The aim is twofold; first, I will review this body of empirical research in order to find out whether online journalism is more technologically innovative today than by the turn of the millennium. Second, I will point to the limitations of such a technological approach to the research of online journalism. What exactly can such an approach tell us about what online journalism really is? What other approaches might be considered?

I have chosen to limit the review to studies conducted in the US and Europe that are published in either acclaimed peer-reviewed academic journals or presented at peer-reviewed academic conferences. Some reports and books are also included. These studies were found through searches in Google scholar and to some extent limited to the access provided by my academic institution. From the references of this first body of studies, additional studies were found, which in turn became the source of a few additional studies. Studies published/presented prior to 2000 have not been included unless they provide some relevance as context for more recent studies.

The assets of new technology

The techno-approach to research on online journalism has been dominated by investigations of the three assets of new technology that are generally considered to have the greatest potential impact on online journalism: Hypertext, interactivity and multimedia (Deuze, 2003; 2004; Deuze and Paulussen, 2002; Paulussen, 2004; Dahlgren, 1996; Domingo, 2006, among others). The general assumption of the “techno-researchers” has been that an innovative approach to online journalism implies utilizing these assets of new technology. Exploring the innovative possibilities of these assets hence became the goal of the techno-approach to research on online journalism.

Several researchers have made attempts to widen the list of technological assets for online journalism. Dahlgren (1996) added archival and figurational, Harper (1998), Lasica (2002) and others spoke of personalization in some way or the other, inspired by the (in the second half of the 1990s) much hyped concept of “the Daily Me”, introduced by Negroponte (1995). Pavlik (2001) added contextualisation and ubiquity, and in recent years much attention has been given to the asset of immediacy (see for instance Domingo, 2006). Zamith (2008) extended the list to a compilation of seven assets: interactivity, hypertextuality, multimodality, immediacy, ubiquity, memory and personalization. In addition, the literature on technology and

online journalism is flooded by a sea of different concepts that describe similar or even the same phenomenon or asset – concepts like convergence, transparency, hypermedia, user-generated content (UGC), participatory journalism, citizen journalism, wiki-journalism and crowdsourcing.

However, most of these (additional) assets can be treated as concretizations of interactivity, hypertext and multimedia depending of course on how these three concepts are defined. I will base the following review on rather broad definitions of these three concepts. The definitions will be offered in the introductions of each of the following sections. In Table 1 I lay out the different concepts that flood the literature to make visible how I understand their reliance to hypertext, interactivity and multimedia.

[Insert table 1 here]

It must, however, be noted that the techno-approach research lacks commonly accepted definitions of hypertext, interactivity and multimedia. This creates some confusion as to what these characteristics represent and how they differ from one another. What some label “interactivity”, others label “hypertext”. In fact, both hypertext and multimedia can be characterized (and are often characterized) as “interactivity”.

Hypertext

Hypertext is generally understood as a computer based non-linear group of texts (i.e. written text, images etc) that are linked together with hyperlinks. The term was first coined by Nelson (1965), who described it rather roughly as “a series of text chunks connected by links which offer the reader different pathways” (cited in Tsay, 2009, p. 1). Most scholars researching hypertext in online journalism rely on what Aarseth labels a “computer industrial rhetoric” (1997, p. 59), i.e. an understanding of hypertext as a technological function (made visible by the electronic link) rather than an observable practice of interaction between text and reader. Researchers interested in hypertext as a text-reader practice are more likely to coin the object of study a practice of interactivity rather than a practice of hypertext.

The general assumption of researchers interested in hypertextual online journalism is that if hypertext is used innovatively it would provide a range of advantages over print journalism: no limitations of space, the possibility to offer a variety of perspectives, no finite deadline, direct access to sources, personalized paths of news perception and reading, contextualization of breaking news, and simultaneous targeting of different groups of readers – those only interest in the headlines and those interested in the deeper layers of information and sources (Engebretsen, 2000; 2001; Fredin, 1997; Gunter, 2003; Huesca, 2000; Deuze, 1999; Kawamoto, 2003; Dahlgren, 1996; Jankowski and van Selm, 2000 among others).

Content analysis

Empirical research on the presence and relevance of hypertext in online journalism tends to rely on the methodology of quantitative content analysis to statistically count the amount of links present in online news sites. The findings are generally (but with many variations) categorized according to the three different types of hypertext identified by Shipley and Fish (1996); Target links (links within documents), relative links (links to other pages within a site),

and external links (links from one site to another site) (cited in Wood and Smith, 2005). Most of the content analysis studies of hyperlinks in online journalism are snapshots of a situation at specific moments in time. A few of them are larger, cross-country studies, like Kenny et al (2000), who investigated 100 online newspapers (62 from the US and 38 from “other countries”) at the end of the millennium and found that 33 percent of them offered links within news stories (target links) and only 52 percent of them offered some kinds of hyperlinks. Jankowski and van Selm (2000) investigated 13 online news sites in the US, The Netherlands and Canada and found similar results. A few years later, van der Wurff and Lauf (Eds) presented studies of 72 European online newspapers and found that hyperlinks was the least developed “internet feature” (2005, p. 37). In their research on the front-pages of 26 leading online newspapers in 17 countries worldwide in 2003, Dimitrova and Neznanski (2006) found that use of hyperlinks had become “an established feature of online news”, but that the majority of the links was relative links (within-site links, mostly to archived material). Compared to these studies, Quandt (2008) found in a study of 10 online news sites in the US, France, Germany, the UK and Russia that hyperlinks was used to a somewhat greater extent: 73 percent of the 1600 full-text articles he analyzed had relative links, 14.3 percent had target links and 24.7 percent had external links.

Other, more nation-specific studies conclude that hyperlinks/hypertext is not utilized to its potential in online journalism, especially concerning the use of target links and external links (In Scandinavia: Engebretsen, 2006; In Slovenia: Oblak, 2005; In Ireland: O’Sullivan, 2005; In Flanders: Paulussen, 2004; In the US: Pitts, 2003; In Spain: Salaverria, 2005).

A common explanation in these studies for the perceived lack of hypertext in the online news sites investigated is that a majority of the stories published online is shovel ware, i.e. stories that are originally published in print. Only a few studies offer more theoretically informed explanations of the findings, and even fewer offer a longitudinal approach. One study that does both is Tremayne’s (2006) analysis of front-pages of ten online newspapers in the US over a period of six years (1999-2004). He found that the amount of external links decreased during these years, while relative links increased. He explained this by network theory:

“[a]s each organization builds up its own archive of Web content, this material is being favoured over content that is off-site. This is just one example of preferred attachment, which is the driving principle of network theory” (2006, p. 60).

Preferred attachment may be the result of a protectionist strategy aiming at keeping readers on-site, even though it is not portrayed as such in network theory. Such a strategy conflicts with the utilization of hypertext technology.

Surveys and experimental studies

While content analysis has been the preferred method to investigate hyperlinks/hypertext in online journalism, other methods have also been utilized. Quinn and Trench (2002) conducted a survey amongst 138 “media professionals” engaged in online news production in Denmark, France, Ireland and the UK. The respondents agreed that providing hyperlinks could make stories more valuable to the readers. However, they were sceptical as to whether the readers “should be left to make their own judgment about the relevance of links, rather than [...] having the news services provide guidance to users” (2002, p. 35). O’Sullivan (2005)

interviewed Irish online journalists and found that few of them found hyperlinks to be an important feature of online journalism. On the contrary, they expressed concerns as to whether (external) hyperlinks would lead readers away from their site. Krumsvik found in his case studies of online news production at the CNN and the Norwegian public broadcaster NRK, that hypertext was to a little extent utilized – external links were “ignored” (2009, p. 145).

In an experimental study of how readers in the US evaluate in-text (target) links in news stories Eveland et al. (2004) found that only the experienced web users found such hypertext structured news stories valuable. For in-experienced users, the hypertext structure was a disadvantage. Sundar (2009) found similar result in his experimental study. However, users seem to be satisfied with relative links according to a survey amongst readers of Flemish online newspapers (Beyers, 2005).

Hypertext summarized

Based on these studies, it seems that relative hyperlinks, i.e. hyperlinks to other stories within the online news site, is the most common form of hypertext structure found in online journalism, while target links (links within stories) and external links are used to a lesser degree. A protectionist attitude might prevent utilization of external links while utilization of target links may be obstructed by a high degree of shovel ware material and uncertainty as to whether users actually benefit from such links.

Interactivity

Like hypertext, interactivity is a slippery concept that is used to describe numerous processes related to communication in general and practices like online journalism in particular. Based on a review of the “history” of interactivity, Jensen arrives at this definition: Interactivity is “a measure of a media’s potential ability to let the user exert an influence on the content and/or form of the mediated communication” (1998, p. 201). Jensen separates interaction from interactivity and his definition is therefore mainly a technological one. Interaction refers to the social dimension of interactivity, and McMillan argues for an incorporation of this dimension as well. Accordingly, she has identified nine different understandings of interactivity along two different axes (McMillan 2002; 2005) – see Table 2.

[Insert table 2 here]

All these kinds of interactivity may be found in an online newspaper. However, the Human-to-Computer axis (or “navigational interactivity”, as Deuze (2001) labels it) is similar to what I in the previous section categorized as hypertext. The research covering this axis was therefore included there. Out of the then six notions of interactivity that are left only two seem to have occupied researchers of interactivity in online journalism to a great extent: human-to-human (both features and processes). This research is dominated by questions such as to what degree users are allowed to interact with online newsrooms/online journalists through emails; to what degree online news site offer discussion forums; and whether users are allowed to comment on stories or in other ways be involved in the production process.

Content analysis

As with hypertext, the research on interactivity in online journalism is dominated by content analysis, even though a greater body of this research also relies on surveys and interviews with journalists. Kenny et al. (2000) concluded that only 10 percent of the online newspapers in their study offered “many opportunities for interpersonal communication” and noted that little had changed since the introduction of Videotex¹ 25 years earlier: “Videotex wanted to electronically push news into people’s homes, and so do today’s online papers”. Similar findings and conclusions are found in Pitts’ (2003), Jankowski and van Selms’ (2000) and Dimitrova and Neznanski’s (2006) studies of news sites in the US; in van der Wurff and Lauf’s (Eds) (2005) investigations of European online newspapers; in Quandt’s (2008) analysis of news sites in the US, France, the UK, Germany and Russia; in Paulussen’s (2004) investigation of Flemish online newspapers; Oblak’s (2005) study of Slovenian online news sites; O’Sullivan’s (2005) research on Irish online newspapers; Fortunati et al.’s (2005) study of online newspapers in Bulgaria, Estonia, Ireland and Italy; and Spyridou and Veglis’ (2008) study of Greek online newspapers. Comparisons between these studies are, however, difficult to make, due to differences in both methodological approaches and theoretical understandings of what interactivity is. However, it might seem that the European online newspapers tend to offer slightly less interactivity than the online newspapers in the US.

In a longitudinal study of 83 online news sites in the US, Greer and Mensing (2006) found a slight increase in interactive features from 1997 to 2003. The possibility to customize news, however, decreased during the same period. Li and Ye (2006) found that 39.2 percent of 120 online newspapers in the US provided discussion forums – twice as many as in Kenney et al.’s study six years earlier. Hermida and Thurman found “substantial growth” (2008, p. 346) in user-generated content in 12 British online newspapers from 2005 to 2006 (concerning features like comments to stories and “have your say”). In an analysis of the level of participatory journalism in 16 online newspapers in the US, the UK, Spain, France, Germany, Belgium, Finland, Slovenia and Croatia, Domingo et al. concluded that interactive options promoting user participation “had not been widely adopted” (2008, p. 334). However, their findings suggest a distinct increase in most such interactive options compared to earlier studies, especially regarding the possibility for users to comment on stories, which 11 of the 16 online newspapers allowed. The process of selecting and filtering news, however, remains the most closed area of journalistic practice, allowing the authors to conclude that: “[t]he core journalistic role of the “gatekeeper” who decides what makes news remained the monopoly of professionals even in the online newspapers that had taken openness to other stages beyond interpretation” (2008, p. 335)”

Some content analysis studies offer insights into how interactive features such as discussion forums are used. Fortunati et al. concluded that users “prefer to remain anonymous and silent” (2005, p. 426). Li and Ye (2006) found similar results, and Thurman (2008) found that the BBC News website’s comments system “Have Your Say” attracted contributions from not more than 0.05 percent of the site’s daily users.

Some studies focus on interactivity in so called j-blogs, e.g. weblogs written by journalists and published on their online newspapers’ site. Singer (2005) found, in her research on 20 j-blogs in the US, that the journalists “are [...] sticking to their traditional gatekeeper function even with a format that is explicitly about participatory communication” (2005, p. 192).

However, two other studies of j-blogs offer alternative findings. Wall (2005) investigated US j-blogs on the Iraq war in 2003 and found that these j-blogs emphasized audience participation to a much greater extent than the online newspapers in general. Robinson (2006) investigated 130 US j-blogs and found similar results.

Surveys and interviews

Studies relying on surveys and interviews with journalists contribute with similar findings as the content analysis studies. Riley's qualitative interviews with journalists at a metropolitan US newspaper in the late 1990s offer some interesting insights into the attitude towards interactivity at the time. According to Riley (1998), most reporters were "horrified at the idea that readers would send them e-mail about a story they wrote and might even expect an answer". Heinonen (1999) found similar attitudes in his interviews with Finnish journalists during the same period. However, this attitude seems to have changed. Schultz (2000) found a slightly more positive attitude towards interactivity among journalists at The New York Times, as did Quinn and Trench (2002) in their interviews with journalists in 24 online news organizations in Denmark, France, Ireland and the UK. More recent studies suggest an even broader acceptance of interactivity among online journalists. In a survey of journalists in 11 European countries O'Sullivan and Heinonen (2008) found that 60 percent of the respondents agreed that linking with the audience is an important benefit of online journalism. O'Sullivan's (2005) study in Ireland, Paulussen's (2004) in Flanders, and Quandt et al.'s (2006) study in Germany and the US all found similar results.

In a broad scale study relying on 89 in-depth interviews with editors and journalists in newspapers and broadcasting stations in 11 European countries, Metykova (2008) found that the relationship between journalists and their audience had indeed become more interactive, especially regarding email and text message interaction. However, this increase in interactivity "tended to be seen as empowering journalists to do their jobs better rather than blurring the distinction between content producers and content consumers" (2008, p. 56).

Chung (2007) in interviews with website producers nominated for the Online Journalism Award in the US, and O'Sullivan (2005) found that online journalists, web producers and editors find it difficult to implement interactive features, even though they express a willingness to do so. O'Sullivan (2005) offers an interesting perspective: The use of freelancers may obstruct interactive features because freelancers cannot be expected to interact with readers to the same degree as the in-house editorial staff. Freelancers are generally not paid to participate in discussions with readers or initiate other kinds of interactivity.

Reception studies

Surveys of online newspaper users in Europe found that users lacked interest in participating on discussion forums and similar features (In Sweden: Bergström, 2008; In Flanders: Beyers, 2004; 2005; In Finland: Hujanen and Pietikainen, 2004; In Germany: Rathmann, 2002). The most important facility of online newspapers according to these survey studies seems to be that online newspapers are continuously updated. Already in the mid 1990s Singer (1997) found, in interviews with 27 journalists in the US, that those journalists who were positive towards the Internet and new technology emphasized the importance of immediacy in

online journalism. Quandt et al. (2006) found that the online journalists in Germany and the US valued immediacy as the most important feature of online journalism. O'Sullivan found that immediacy was the "big thing" and that frequent updates was "the great strength of online media" (2005, p. 62).

Interactivity summarized

To summarize the research on interactivity in online journalism, it seems clear that online news sites are becoming more and more interactive, first and foremost regarding human-to-human interactivity. Users are allowed to contribute to the content production by submitting photos and videos and by commenting on stories and participate in discussion forums. However, users are seldom allowed to participate in the selecting and filtering of news. The traditional norm of gatekeeping is thus still very much in place in the practice of online journalism. As Fortunati et al. concluded: "[...] the power relation between media organisations and readers is not in play" (2005, p. 428).

Furthermore, the research reveals that online journalists and editors are becoming more eager to interact with readers, but organizational constraints like time pressure and the utilization of freelancers prevent them to a certain degree to do so. Last, but not least, user studies suggest an overwhelming indifference with interactivity – it seems that people prefer to be passive consumers, not active producers.

However, it seems that the picture might be slightly different when online newspapers report on major breaking news events, like natural disasters and other types of crises events. Several studies in recent years that focus on citizen journalism, like for instance Allan and Thorsen's (Eds) compilation of case studies from around the world (2009), have demonstrated a boost in user participation and interactivity in the coverage of such events. In other words, it may seem that when crises strike, gatekeeping is to a certain degree abandoned.

Multimedia

Deuze (2004, p. 140) argues that the concept of multimedia in online journalism studies generally is understood in either of two ways: 1) as a presentation of a news story package where two or more media formats are utilized (e.g. text, audio, video, graphics etc), or 2) as a distribution of a news story packaged through different media (e.g. newspaper, website, radio, television etc). Most research on multimedia in online journalism deals with the first understanding. When I in the following use the term multimedia I will therefore have it refer to such an understanding, albeit in a bit more pragmatic sense that better fit the empirical research on multimedia in online journalism. Since an online news story with text and a photo is generally not considered to be multimedia, I will have the term refer to stories and websites where more than two media are utilized. I will also let the term include not only the presentation of news, but also the production of news.

Content analysis

As with hypertext and interactivity, most studies of multimedia in online journalism rely on content analysis of websites. Schultz (1999) found that only 16 percent of online newspapers

in the US had multimedia applications in the late 1990s. Two more qualitative oriented content analysis studies revealed similar lack of multimedia (In the US, Canada and the Netherlands: Jankowski and van Selm, 2000; In the US: Dibeau and Garrison, 2001). Jankowski and van Selm concluded that of all supposed added value facilities of online journalism multimedia “is perhaps the most underdeveloped” (2000, p. 7). However, online news sites affiliated with TV stations were more prone to utilize multimedia according to the same study. Yet, in a more extensive investigation of TV broadcasters’ online news sites in the US, Pitts lamented: “[t]he majority of stations provide text-only stories, thus failing to use the multimedia capabilities of the web” (2003, p. 5). In their extensive investigation of European online journalism, van der Wurff and Lauf (Eds) (2005) found that print newspapers were as much about multimedia as online newspapers. Quandt (2008) found that 84.5 percent of the 1600 stories he analyzed in 10 online news sites in the US, the UK, Germany, France and Russia were strictly text-based. In Scandinavia, Engebretsen (2006) found that online newspapers used a bit more multimedia, but still not more than found in previous studies in the US. Dimitrova and Neznanski’s (2006) study of the coverage of the Iraq war in 2003 in 17 online newspapers from the US and elsewhere showed no increase in the use of video and audio in the US newspapers compared to Schultz’s study published seven years earlier. Furthermore, they found minimal difference between the international and the US online newspapers (slightly more use of multimedia in the US online newspapers). However, Greer & Mensing (2006) found a significant increase in multimedia use during the same period (1997-2003) in their longitudinal study of online newspapers in the US.

Interviews and surveys

Studies relying on interviews and surveys with online journalists and editors reveal some of the possible reasons for the lack of multimedia in online journalism found in the content analysis studies. According to Jackson and Paul (1998) (the US) and Neuberger et al. (1998) (Germany) online journalists and editors had a positive attitude towards utilizing multimedia technology, but problems related to lack of staff, inadequate transmission capacity and other technical issues obstructed the materialization of multimedia content. Later studies indicate that online journalists and editors downscale the value of multimedia content: Quandt et al. (2006) found that multimedia was considered to be the least important feature of web technology for online journalism. O’Sullivan (2005) found similar results in his qualitative interviews with Irish online journalists. Thurman and Lupton interviewed 10 senior editors and managers affiliated with British online news providers and found that the general sentiment was that “text was still core” (2008, p. 15). However, Krumsvik, in interviews with CNN and NRK (Norwegian public broadcaster) executives, found a much more positive attitude towards multimedia than towards interactivity and hypertext (2009, p. 145). And a recent case study of multimedia content on the BBC online concludes that video content has increased tremendously (Thorsen, 2010).

Reception studies

There are not many studies that investigate the users’ attitudes towards multimedia news online. In an experimental study, Sundar (2000) found that those who read text-only versions of a story gained more insight into the topic of the story than those who read/viewed multimedia versions of the same story. Beyers (2005) found that only 26.4 of the Flemish online newspaper

readers in his survey thought the added value of multimedia was an important reason to read online newspapers.

Multimedia summarized

To summarize the findings of the research on multimedia in online journalism deriving from the techno-approach, it seems that multimedia remains the least developed of the assets offered to journalism by Internet technology. Online journalism is mostly about producing, distributing and consuming written text in various forms, even though some studies describe an increase in the use of multimedia, especially in broadcastings station's online news sites in recent years. However, it seems that practitioners are struggling to cope with multimedia, and the users seem to be quite indifferent.

Discussion

The review leaves an impression that online journalism is left behind by the technological developments in new media. Linear text is preferred over hypertext and multimedia (hypermedia). Traditional norms of gatekeeping are preferred over participatory journalism and alternative flows of information, albeit interactivity seem to play a larger role when it comes to how major breaking news events, like crises events, are researched and covered. Journalists and editors seem, at least to some extent, eager to embrace change brought forward by new technology, while users don't seem to care. All in all; it seems that technology may not be the main driving force of developments in online journalism. The question is therefore: how can research on online journalism better grasp why online journalism develops as it does?

Some researchers suggest that ethnography and a closer look at the practices and routines of online news production is the answer. Brannon (1999), Boczkowski (2004), Domingo (2006), Küng (2008), Steensen (2009a) and the case studies presented in Domingo and Paterson (eds) (2008) all utilize the methodology of ethnography, even though their approaches to a large extent are still dominated by the technological discourse. Some other studies also utilize ethnographic methodology, but from a broader, albeit still technology oriented, approach that aims at finding out how convergence of newsrooms affect the production of journalism (Dupagne and Garrison, 2006; Erdal, 2009; Klinenberg, 2005; Lawson-Borders, 2006).

These studies provide valuable insights into the complexity of online journalism production and put forward findings that shed light on why technology is not utilized to the degree that has been previously postulated. Steensen (2009a), building on Boczkowski (2004), for instance found that newsroom autonomy, newsroom work culture, the role of management, the relevance of new technology and innovative individuals are vital factors as to how innovative online newsrooms are. And Domingo (2006) found that the strive for immediacy hindered the utilization of other assets of new technology in the newsrooms he researched.

Notwithstanding the significant contributions of these studies, there are still many shortcomings of the research on online journalism. I will conclude this paper with six suggestions for further research.

First, studies of online journalism could benefit from a broader *contextualization*. Mitchelstein and Boczkowski (2009) argue that the research on online journalism lacks historical

dimensions. Relating online journalism to developments in journalism prior to the Internet boom could therefore be a suggestion. Viewing online journalism in reliance to media theory and how media and media products transform over time could be another. Mitchelstein and Boczkowski (2009) also identify a need for more cross-national studies, and for online journalism researchers to look beyond the newsroom and the news industry and take into account structural factors of for instance the labor market and comparable processes in other industries in order to better understand “who gets to produce online news, how that production takes place, and what stories result from these dynamics” (2009, 576). It should however be noted that the works of Deuze (2007) and Marjoribanks (2000; 2003) and their joint editing of a special issue of the journal *Journalism*² to some extent address these shortcomings.

Second, the research on online journalism is flooded by a range of theoretical concepts that are either interchangeable or are interpreted differently by different researchers. Concepts like interactivity, hypertext and multimedia are understood in different ways, and other concept, like genre and innovation are generally used without any theoretical discussion on what they represent and how they might inform the research on online journalism. A stronger emphasis on *conceptualization* is therefore needed.

Third, most of the research on online journalism is limited to a focus on the presentation and to some degree the production and reception of hard/breaking news and the rhetoric of online news sites’ front-pages. The development of other genres therefore seems to have been downplayed in the research, even though some studies have been conducted on online feature journalism (Boczkowski 2009; Steensen 2009b; Steensen 2009c). Furthermore, sections and stories that are reached by other means than via links from the front-page (e.g. traffic to stories and sections generated from search engines) seem to be under-represented in the research. A stronger emphasis on the *diversification* of online journalism is therefore needed.

Fourth, research on online journalism could benefit from a greater recognition of and reflection on *the text as a research unit*. Although most research on online journalism deals with text in one way or the other, there is a striking neglect of theoretical and methodological reflections on what texts are, how they facilitate communication, how they relate to media, and how they connect media with society. Genre theory and discourse analysis could for instance be valuable tools to establish research approaches that aim at investigating online journalism as communication. Lüders et al. (forthcoming), for instance, show how the concept of genre provides vital insights into the emergence of new media like the personal weblog.

Fifth, although some of the research mentioned above makes longitudinal claims, the empirical material is seldom of *longitudinal character*. This seems to be a flaw considering the swift development of online journalism and the lack of common theoretical and methodological approaches, which makes comparisons between findings difficult.

Sixth, research of online journalism suffers from a *methodological deficiency*. The research is dominated by content analysis, surveys and interviews. Qualitative approaches are rarely utilized, even though ethnographic news production studies seem to gain popularity. However, given the limited cases that are possible to investigate with such a methodology, more ethnographic research is need. Furthermore, content analysis should to a greater extent be combined with qualitative textual analysis of online journalism texts – all in order to uncover the complexity of online journalism.

Notes

“Videotex (or "interactive videotex") was one of the earliest implementations of an "end-user information system". From the late 1970s to mid-1980s, it was used to deliver information (usually pages of text) to a user in computer-like format, typically to be displayed on a television.” (Wikipedia on Videotex, url (accessed 27 November 2009): <http://en.wikipedia.org/wiki/Videotex>)

² *Journalism* 10 (5), published October 2009, special issue on “newswork”, edited by Mark Deuze and Tim Marjoribanks.

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Hypertext	Interactivity	Multimedia
Archival	Figurational	Convergence
Contextualisation	Immediacy	Hypermedia
Ubiquity	UGC	
Transparency	Participatory journalism	
Memory	Citizen journalism	
	Personalization	
	Wikijournalism	
	Crowdsourcing	

Table 1: Assets of new technology on online journalism in reliance to hypertext, interactivity and multimedia

Table 2: Six notions of interactivity, according to McMillan (2005)

	Human-to-Human	Human-to-Computer	Human-to-Content
Features	<ul style="list-style-type: none"> • Instant messaging • E-mail 	<ul style="list-style-type: none"> • Navigational tools such as menus • Search tools 	<ul style="list-style-type: none"> • Tools that facilitate personalized content • Unique content forms
Processes	<ul style="list-style-type: none"> • Participating in an IM chat • Sending/receiving e-mail 	<ul style="list-style-type: none"> • Navigating a web site • Using a search engine 	<ul style="list-style-type: none"> • Creating a personalized home page • Seeking out news stories in multiple media formats
Perceptions	<ul style="list-style-type: none"> • Believing that IM and e-mail facilitate communication • May be based in personal interest or involvement with topics of communication 	<ul style="list-style-type: none"> • Finding a web site easy to control and engaging • May be based in experience with the technology as well as interest/ involvement with topic 	<ul style="list-style-type: none"> • Believing that customized and in-depth content is interactive. • May be based in time available for viewing content.

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