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**Implications of Technological Change in News Organizations
for Journalists' Tasks and Skills**

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Introduction of the Problem

In modern times, journalism has been practiced in an organizational setting. Journalists have not usually had the ability to distribute their products themselves. Rather, they have relied on organizations that own or control distribution systems built around use of the airwaves, cable wires, or fleets of trucks to get news products to the consumers. Since those distribution systems are costly to assemble and maintain, large, complex, well-financed organizations own or control them.

The advent of the Internet has the potential to change the nature of journalism, for it gives journalists the ability to distribute the news without reliance on media organizations. However, at this writing, most paid journalists still work for media organizations either as employees or, increasingly, as freelance or contract workers (Deuze, 2007). Large media organizations maintain brands that still attract large audiences, and they still gain an advantage from routines that enable efficient production of the raw materials of news. Routines, defined by Shoemaker and Reese (1996) as "those patterned, routinized, repeated practices and forms that media

workers use to do their jobs” (p. 105), guarantee that the media organizations, at relatively fixed costs, can obtain the materials they need to fill newscasts and news columns.

As other papers in this collection discuss in more detail, the internet has, however, created a challenge to existing media organizations by pulling audiences away from the existing news providers. Newspapers, television and radio had a well-established and successful business model on which the very expensive job of routine news work has relied. Audiences for traditional media are falling (though they are still large), but in following audiences online, news providers are facing not only the challenge of working in a far more competitive environment but also the simultaneous challenge of adapting to a new medium which is, in turn, changing the work of journalists. The nature of that change is the topic of this article. The goal is to understand from the somewhat limited data at hand how the Internet has changed news work and is likely to change it more in the future, as well as what these challenges mean for journalists and for those who manage them.

We begin with an overview, largely descriptive, of the technical changes to the jobs of journalist. We then offer a theoretical discussion of the news story ideation process—which, we argue, is at the core of news work. We go on to describe, using recent research of our own as well as from other media scholars in Europe and the United States, the ways in which newsrooms and news organizations have changed as a result of recent technological changes, most of them linked in some way with the Internet. We also report on the way in which the new technology has impacted both the input of information (research, reporting and user generated content) and its output (the use of video, audio and text). Finally, we raise some questions about the implications of these changes for the management of journalists and news organizations in a period of transition.

From shovelware to multi-media newsrooms

Most of the content produced by journalists for the Internet through the 1990s was derisively but accurately called “shovelware” (Thalhimer, 1994). Stories written for one medium, generally a newspaper, were simply “shoveled” online without any changes or additions. Gradually, some journalists here and there started to make adjustments to accommodate the capabilities of the new medium. They began to think about what they wrote as “hyperstories” (Fredin, 1997), with links to other digital content such as background information or source documents.

Graphic artists began incorporating animation in their infographics, where it was especially useful for providing detailed explanatory information (McAdams, 2005). Photographers took video as well as still cameras on assignment. Reporters accustomed to tape-recording interviews began making portions of those interviews available as audio clips linked from their online stories. More in-depth pieces pulled all the available tools together into what a New York Times Online product manager called “breaking analysis,” a video piece done as a follow-up to stories on complex topics such as Supreme Court decisions (Bryant, 2006). Nevertheless these changes have been patchy and many newspaper-related sites continued to stick primarily to traditional storytelling methods (Redden and Witschge, 2009).

However, the equipment needed to produce audio and video has become steadily cheaper to buy, lighter to carry and easier to use. By the end of the decade, a mobile phone was enough to capture breaking news footage – and send it back to the newsroom instantly. As broadband became increasingly available, video content on news web sites increased, as did the possibility for cooperation between print and TV companies. Multimedia journalism proved popular, garnering public attention and online industry awards. By 2008, nearly every award given to a

news organization by the Online News Association, in categories ranging from breaking news to investigative journalism, prominently featured video content, typically along with audio and animation (Online News Association, 2008). The same was true for other prizes such as the Digital Edge awards and the Webby awards.

Usage data suggests that audiences are increasingly interested in video content. In Europe, video is now the most popular online media activity. Most of the usage is for short videos such as those available on YouTube; however, JupiterResearch predicts services such as the BBC's iPlayer and M6 Replay in France will significantly increase the audience for longer-form video such as documentaries and films (JupiterResearch, 2008).

In a 2007 U.S. study, 37 percent of adult Internet users reported watching news videos, making it the most popular category of online video for Americans over the age of 29 – and second-most popular for younger adults, who watch more news video than their older compatriots (Madden, 2007). A glance at YouTube indicates millions of views of videos that originally were produced by traditional news outlets, mostly television networks but also including newspapers and magazines. An informal survey in late 2007 indicated U.S. daily newspapers sites were producing four to eight videos a week (Dickinson, 2007), and the volume continues to expand. However, text still predominates on mainstream news sites, even those of TV-based organizations such as the BBC.

For larger news organizations in the developed world, and increasingly for smaller ones as well, multimedia content has become a part of the journalism they provide online. In a recent international survey of newspaper editors more than 80 percent said that within five years, journalists in their country would be expected to know how to produce content for all media platforms (Newsroom Barometer, 2008). While there is as yet little empirical evidence that

training journalists to work across platform is the best way of making use of the new possibilities, it is safe to say that news managers everywhere are thinking seriously about how best to incorporate multimedia in the journalistic mix. Getting to that point, however, means significant changes in the newsroom – changes in physical layout, organizational structure and journalistic culture. We turn to these changes next, starting with an overview of the first change, then devoting more attention to the latter two, which include changes in the way in which we think about news and journalism., ,

Changes in the Physical Environment

The physical environment in which journalists worked to produce content for a media-affiliated website has evolved differently in the United States, the United Kingdom and the rest of Europe. European newsrooms had few exclusively online news operations through the 1990s. Editors and reporters who worked on the website seldom did so full-time (Deuze, 1999). In the United States, online staffs during this period tended to be tiny (Singer, Tharp & Haruta, 1999) and were commonly, though not universally, segregated from their print counterparts. “Where I work is as far back in the building as one can go,” an online staffer said in 1998. “This makes it difficult for the newspaper staffers to understand exactly what we do back here” (Paul, 1998). Larger organizations, such as at the *Dallas Morning News* and *Atlanta Journal-Constitution*, tended to put their online staffs on separate floors, or even whole other buildings, such as at *The New York Times* and the *Guardian* in the UK.

A decade later, the prevailing wisdom had shifted – and so had much of the furniture and its occupants, particularly among major media outlets such as the *Times*, which moved nearly 1,300 print and online journalists into a new, unified newsroom in midtown Manhattan in late 2007 (*Trends in Newsrooms*, 2008a). In a 2008 study of 704 editors and online editors of

newspapers around the world, more than half said their newsrooms were integrated, including 68 percent of those in North America and 59 percent in Western Europe. More than two-thirds of the editors of newsrooms worldwide that were not yet converged said they planned to make the change within five years. Well over 80 percent said the physical layout of the newsroom was important in determining how well print and online journalists collaborate (Newsroom Barometer, 2008), and even those that retained segregated newsrooms emphasized the need to keep the doors open. “Our newsroom talks to the online desk 50 times a day; there’s always conversation back and forth,” said a *Washington Post* news executive. “Those conversations have to happen whether you’re merged or not merged” (*Trends in Newsrooms*, 2008b: 46).

As of the late 2000s, one trend in newsroom design is toward a central news desk that feeds material to various platforms throughout the day. Desks are arranged by department rather than by media platform. The model is still novel enough to attract attention, but by late 2008, it had been adopted by a growing number of larger papers in various countries. The UK’s *Daily Telegraph*, for instance, is among those using a “hub and spoke” newsroom arrangement, with the desks of departments such as sports, features, foreign news and city news arrayed around a circular central desk, where editors hold their news conferences (*Trends in Newsrooms*, 2008c). At *De Volkskrant*, the Netherlands’ leading newspaper, a 100,000-euro office overhaul resulted in a converged news desk placed in the center of the newsroom, so that anyone entering or crossing the newsroom had to move around this editorial ground zero (*Trends in Newsrooms*, 2008d).

More challenging than the physical redesigns have been changes in organizational structures and journalistic culture driven by this ongoing trend toward media convergence. We turn next to a consideration of its effects on news philosophies and competitive pressures

Competing in the Marketplace

In a period of convergence, individual media organizations still must find ways to differentiate themselves. Product differentiation is often achieved through branding, which consists of the development and maintenance of sets of product attributes and values appealing to customers (Chan-Olmsted, 2000; Chan-Olmsted & Kim, 2001). Nine in 10 of the managers of broadcast media outlets that Chan-Olmsted and Kim surveyed said they discussed the branding concept with senior managers in their companies. Newspaper industry executives also said that creating and maintaining an image of their product is crucial to reaching and retaining readers.

At the core of branding often is what news professionals refer to as “news philosophy,” the organization’s general approach to the news product (Nuell, 1998; Connolly, 2002) and its role in the community. This approach is market-driven, for it is used to differentiate competitive products. Differences in news philosophy are key to the fundamental distinctions among media types. In European countries, clear political distinctions produce obvious differences in news philosophy (Hallin & Mancini, 2004), as do differences between media aimed at elite and popular audiences or local and national ones. . In the United States, where news organizations are less clearly politically aligned, these differences in philosophies may be more subtle.

There are also philosophical differences based in the cultures that have grown around different technologies. Television news operations generally differ from radio news operations, which differ from newspapers. However, in terms of key news production characteristics, a radio station with a particular news philosophy would be more like a television station with that same philosophy than it would be like another radio station with a different news philosophy.

The news philosophy is expected to have an impact on how journalists generate story ideas and on the structure and techniques they use to tell their stories. For Gans (1979), the key process in news creation is story suggestion. Journalists are responsible for generating story ideas, a process Bantz, McCorkle and Baade (1980) termed “story ideation.” Becker and his colleagues (Becker et al., 2001) examined newsroom structure from this new perspective, which differs from previous work on news construction in an important way. While news construction work focuses on the routines that journalists use to gather the raw materials of news, this perspective focuses on the routines they use to generate story ideas. A key contribution of this approach is its recognition that the ideation process precedes the story creation process, with its routines for assembling information into a story.

Differences in the story ideation process reflect the different roles each media organization plays in a communication system—its news philosophy. Understanding this philosophy, along with the routines for generating story ideas, is crucial to understanding how that organization is likely to use resource materials. The understanding also is likely to be crucial in helping news organizations work together in a converged media environment.

In unpublished observational studies conducted in three U.S. media markets, Vlad and Becker explored how media outlets develop routines to generate story ideas and how their product differentiation strategies affect story ideation. The researchers also looked at use of the Internet and other media in the process of story generation.

There was clearly a difference between the newspaper and the television stations. Conversations in the newspaper newsrooms reflected an interest in comprehensiveness, completeness of news coverage, and breadth of topics covered. In the television newsrooms, the

focus was much narrower. In most of the cases, news directors recognized the limited scope of what they could do in a newscast.

The data showed that news philosophy differed by traditional media type, but it also showed a variation in news philosophy among journalists at the different television stations. The journalists at the larger of two stations in the studies articulated a sense that their newscasts should represent the activities of the community on any given day in at least a general way. The reporters and editors at the second station made no such claims. Their goal was to assemble a news package that the community would find attractive.

Overall, the differences among organizations with a broadly similar mission were striking. They all generated story ideas. They all created stories from those ideas. They all distributed those stories to their audiences. Yet they went about these tasks in different ways, beginning with differences in story ideation or idea creation and ending with different final products. Each media organization seemed to have a news philosophy, or a sense of its mission, that was shaped by what was successful in the market. They sought to “brand” their products accordingly.

Localizing and making the content useful or entertaining to the public were among the most quoted branding practices. In addition, some journalists referred to how the story is told, for instance in relation to character development or scene setting. They recognized that they had options in telling the story, such as whether to tell it “straight” or in some other fashion. There also were clear media differences in narrative structure. The radio accounts were most straightforward. The television journalists saw drama and scene setting as more suitable. The daily newspapers mostly told the story in a very simple way, but still with a recognition of the value of drama and scene setting.

However, the observed forces of market differentiation are countered by what Bourdieu (1998) terms the “circular circulation of the information.” He argues that unlike other industries, where monopoly leads to uniformity and competition creates diversity, competition in the media industry is a homogenizing force. Though the media organizations invest effort to differentiate themselves from competitors, the products are much more similar than different, he argues, because the decision about what story ideas are relevant almost always is made based on what other informers have done or are doing, as well as on audience feedback in the form of ratings.

Moreover, journalists are the most avid media consumers. Print journalists read other newspapers. Most newspaper and television newsrooms have TV sets that broadcast programs of major channels, including competitors. Media organizations subscribe to the same news agencies. In budget meetings, the editorial staff talks about exclusive stories that they generated and about stories that the competition had. More recently, journalists have used the Internet to get stories or story ideas. Vlad and Becker (2006) found that broadcast and print professional journalists repeatedly referred to blogs that were “trustworthy” as potential sources of story ideas.

In their recent studies, Vlad and Becker found that Bourdieu’s homogenization thesis was clearly in operation. In the first day of observation, the topics of nine stories were common for all three media organizations; seven stories were common in the newspaper and one television station; and 21 stories were common for the two television stations. The Internet was used extensively to generate story ideas but not as a replacement for traditional strategies such as beats, networking, and using wire services, scanners and press releases. Though all the organizations in these three research projects aimed to differentiate their product, they used other media (including their competitors) as major story ideation sources.

As Phillips (2009) also found, the speed with which it is now possible for media organizations to view and appropriate material from one another -- by using YouTube, linking, or simply cutting and pasting material from other websites -- is clearly militating against the differentiation which media organizations require if they are to compete with each other rather than duplicating content.

As media move toward convergence, news managers thus need to be aware not only of the dangers of homogenization between externally competing brands but also of the dangers of competing ideation philosophies within the newly merged newsrooms described above. This is the topic to which we will now turn. Without a clear, consistent and shared news philosophy, merged news organizations risk finding themselves, like the proverbial pantomime horse, pulling in different directions.

Changes in the Newsroom Culture

Culture is the air that an organization breathes (McLellan & Porter, 2007), and changing it can be extremely difficult. . Many journalists have approached convergence with considerable trepidation. A relatively early move toward convergence by the BBC in Britain was met with resentment and frustration from journalists who felt that their special skills were valued less highly than before and that the accompanying changes within the newsroom had unsettled “professional status, traditional hierarchies, (and) career opportunities,” among other negative effects (Cottle & Ashton, 1999: 39). The move was reversed in 1999, mainly because of journalists’ concerns about quality (Robins, 1999), and although the BBC has re-introduced a converged newsroom, they are rather wary of multi-skilling this time around. (Lee-Wright 2008).

By the early 2000s, the term “backpack journalist” was being used to describe reporters who went out on a story armed with digital audio and video equipment as well as a pen and notepad (Stevens, 2002). Such reporters were few and far between, and they were regarded mostly with skepticism, at best, by their colleagues. “I went to j-school to be a journalist, not to be a multimedia person, not to be a TV person, not to multitask,” said one newspaper reporter in 2003, adding that he considered television journalism to be an “abhorrent sub-species” (Singer, 2004). Even those who acknowledged the value in developing multimedia storytelling skills warned that the idea of a single journalist doing everything was problematic. “Inevitably, most backpack journalists are a ‘jack of all trades, and master of none,’” wrote veteran journalist and multimedia pioneer Martha Stone (2002). “While some multimedia journalists can handle a variety of tasks efficiently and professionally, most will only deliver mediocre journalism.” Producing content for multiple platforms also can slow the process of news dissemination.

Labor unions also have been alarmed, particularly about individual journalists being asked to do more work for the same pay. “It puts an incredible amount of stress on the reporters themselves, because they’re expected to serve many masters,” U.S. Newspaper Guild President Linda Foley said (Glaser, 2004). “It’s very difficult to produce news and do stories for various media.” In Britain, the National Union of Journalists (2007) has negotiated “enabling agreements” with media companies and issued convergence guidelines that address, among other issues, pay, time demands, and training¹. Not surprisingly, news staffers who responded to a

¹ Training is now offered by a variety of organizations in the United States, including by the Poynter Institute and the American Press Institute, and elsewhere. The “Reinventing the Newsroom” seminar offered by the World Editors Forum is an example. Universities offering journalism degrees and post-graduate study are rapidly moving into this territory, and some are providing mid-career training.

national U.S. study (Huang et al., 2006) thought they should be paid for producing stories for different media platforms, though their newsroom bosses disagreed. Case studies also have indicated that resentment of what journalists saw as extra work for no extra pay affected both overall morale and openness to convergence in some newsrooms in the early part of the decade (Singer, 2004).

In general, “cultural resistance is the biggest hurdle for converging newsrooms,” said Gil Thelen of the *Tampa Tribune*, one of the first U.S. newspapers to try it, back in 2002. He called the requisite cooperation and collaboration “a tall order in our highly individualistic professional mystique” (Thelen, 2002: 16).

There are systemic reasons for such problems with acceptance in the newsrooms: Convergence suggests a potential business model in which journalists produce more content for little or no increased cost to the organization (Quinn, 2005). And in general, journalists, trained to be sceptical, tend to distrust organizations where the benefits of required change are unclear (Killebrew, 2003) or even, to some, downright suspect. In the United States, a national survey of newsroom managers and staffers in 2002 indicated journalists saw media companies, rather than either practitioners or the public, as the biggest beneficiaries of convergence (Huang et al., 2006). Observers in other countries have reported similar issues.

Other, more specific issues play a role, as well. Differing media routines can lead to conflicts over staffing and time management, as well as difficulties related to news flow (Silcock & Keith, 2006). Competitive tendencies and differing “news philosophies” block even low-impact requests for cooperation or information sharing among convergence partners. A lack of adequate training fosters fear about the perceived complexity of the tools needed for cross-platform content production and therefore a reluctance to wrestle with them (Singer, 2004).

In short, the cultural changes are dramatic and ongoing. The Project for Excellence in Journalism summarized the situation in 2008 this way:

Newspaper websites are increasingly a source of hope but also of fear. Editors feel torn between the advantages the web offers and the energy it consumes to produce material often of limited or even questionable value. A plurality of editors (48%), for instance, say they are conflicted by the trade-offs between the speed, depth and interactivity of the web and what those benefits are costing in terms of accuracy and journalistic standards. Yet a similar plurality (43%) thinks “web technology offers the potential for greater-than-ever journalism and will be the saviour of what we once thought of as newspaper newsrooms” (Project for Excellence, 2008a).

Some scholars studying the complexities of managing this cultural change have argued that organizations must demonstrate their commitment to convergence as part of their mission and philosophy, making it simply part of the way they conduct business (Lawson-Borders, 2003). Doing so involves structural changes, and it is to those that we now turn.

Organizational and Structural Change

Cultural change also involves modifications to media outlets’ organizational structures. The overall trend has been from separate roles to shared responsibilities. In the 1990s, job titles and descriptions on the “new media” side of the house rarely corresponded to print newsroom titles; in some cases, the print and online operations were formally set up as two distinct companies (Paul, 1998). Even when both were part of a single company, the chain of command was apt to be different. Top print editors typically reported to the publisher or CEO; top online

editors generally did not. Some reported to print editors, but many were removed from the editorial management structure; for instance, a 1998 study found a number of online editors reported to someone in the marketing department (Singer, Tharp & Haruta, 1999).

Ten years on, a growing number of larger organizations are moving toward a structure in which the editors are responsible for content across media platforms. At the *Sydney Morning Herald* in Australia, for example, an “integrated news desk” handles the work of both print and online reporters (van Niekerk, 2008); throughout the day, copy editors knit multi-source information into updated information for the website, including video or photographs where they are useful, with a full, “final” story available in the next day’s print edition. Although the role of “online editor” may still exist, it is increasingly likely at larger outlets such as these to involve helping reporters and editors adapt material for the web rather than working solely with a separate staff of online-only journalists.

Workflows have also been adjusted to meet the continuous deadlines and the need to care for multiple products simultaneously, which became possible and were therefore rapidly normalized. In the United States, generating more breaking news and multimedia content for newspaper Web sites has become a near-universal strategy (Project for Excellence, 2008b); around the world, more and more papers are moving to a “web first” publishing philosophy, in which most stories are published online as soon as possible after the information is available. Fears that doing so would “cannibalize” print sales seem to be unfounded (pressgazette.co.uk, 2007), although it can be hard to separate the wider economic downturn from particular publishing strategies.

Fears about a decline in quality are harder to dismiss. In general, online journalists face not only continuous deadlines but also pressure from both editors and competitors for constantly updated

news. Moreover, these demands for fresh information, published to multiple platforms, not infrequently correspond with reductions in the size of newsroom staffs. In the United States alone, roughly 3,000 newsroom jobs were lost between 2000 and 2007 (Project for Excellence, 2008b), and 2008 was one of the worst years of all. Taken together, all of these changes are shaking newsrooms to the core. There is a sense among those working for news organizations that change is being driven by technology and that the deeper implications of these changes to working practices and quality have not been fully considered in the rush to establish a presence online (Fenton et al., 2009).

The “Multi-Skilling” of Reporters

Nonetheless, structural change continues apace. As media organizations around the world move online, they are using different models of newsroom organization,. A key and still-unsettled question involves reporters and differing views of what might be an optimal mix of reporter skills. Some newsrooms have emphasized, multi-skilling. In others, the emphasis is on collaboration among reporters with differing skills. Aviles and Carvajal (2008), comparing the systems in two Spanish media companies, refer to these models as either cross-media or integrated.

Novotecnica is an example of a fully integrated news centre in which all journalists are required to do everything; the same reporter will be expected to produce stories for print, radio, television, Internet and other platforms – similar to what editors in the Newsroom Barometer (2008) survey envision. In contrast, La Verdad Multimedia only requires a small minority of reporters to work with more than one medium. Convergence there is mostly a matter of outlook. Editors assess which stories will work best in which medium and assign work accordingly. Journalists are expected to cooperate, but a level of expertise is recognized in each field, and

only those who show a genuine interest and aptitude go on to work across platforms. In a further study of the two largest Spanish newspaper groups (Carvajal et al., 2008), researchers found that “coordination never crosses the point of having journalists of one medium working for another one; the newsrooms stay completely independent.”

Aviles and Carvajal (2008) did not come to strong conclusions about the advantages and disadvantages of each system, but they did point out that journalists working in the fully integrated newsroom were acutely pressured, affecting both the time available for follow-up research and the quality of the final product. It is more likely to be the under-resourced local journalists who are expected to carry out a variety of media tasks: producing video, audio and text, and in some cases editing it online and uploading it to the website. Early research into newsroom convergence suggested that these journalists, often operating with unfamiliar technology and little training, are finding life tough; producing cross-platform media products is more time-consuming than they believe their editors realize (Singer, 2004).

The UK Spaces of the News research found little evidence of full integration. Even at the most integrated newsroom among the INDICATE NUMBER studied, editors planning the day’s output sent specialist camera operators to events expected to require video. Journalists who specialize in text were only expected to shoot video (using video phones) to provide brief “squirts” of illustrative material to use alongside work that is primarily text-based. “The most success we’ve had is when we supplied about a dozen of them with high-quality mobile phones. And they just went out there and did bits of video” (Spaces of the News, 2008).

Video and audio training was often perfunctory, and journalists were so rarely asked to practice their new skills that they rapidly forgot what they had learned, as described by an editor at a regional news site:

“Although we’ve trained reporters to do video, they’ve all got other things to do, they’re far too busy, they’ve forgotten how to do it, and they certainly won’t edit it because they haven’t got the software. They haven’t got the software because the management have said we can’t afford the software. So we’ve wasted a lot of people’s time and money training these video journalists” (Spaces of the News, 2008).

Similar concerns were raised five years ago, in the early days of newsroom convergence in the United States. Although some journalists at the *Tampa Tribune* in Florida in 2003 were “multi-skilled,” journalists saw their core work as generally unchanged -- a finding the researchers found surprising (Dupagne & Garrison, 2006). In other large media markets, full-scale convergence was slow in coming. In Dallas, for instance, where the term “synergy” was widely used instead, journalists in 2003 were being asked mainly to share information rather than produce content for the other media products (Singer, 2004).

Recent reports in the UK *Press Gazette* underline this caution. Trinity Mirror’s Media Wales launched a multimedia newsroom in the summer of 2008, but editorial director Martin Edmunds defined multi-skilled journalists as those “who are able to write across all titles” (Stabe, 2008: 24). An interview with Bert Roughton, managing director of the *Atlanta Journal-Constitution* in the United States, clarifies the problem: “We found we’re not good at it [video...]. TV does it better – it doesn’t get a whole lot more readers in the long run” (Ponsford, 2008:2).

One emerging thread that might be starting to inform the choice of organizational structure is the sense that video on the Internet is different from video on TV. Some editors interviewed in the Spaces of the News research suggested that video embedded in text works better if it provides a “show me” rather than a “tell me” function: the fire, bridge collapse, conference speech, winning goal, etc. In fact, they suggest, it is closer in function to the role of still photography in a newspaper than to news reporting on TV. As one editor said:

“The way that you use video, is not like TV. So whilst there’s an overlap with the text, with print, there’s not really, I don’t think, an overlap with TV, with the video. The video and the news on the Web should be very different and that’s probably where we have a weakness because our video is largely generated by TV so we rely on that.”²

It will clearly be the job of editors to help journalists adapt to the new environment, but some newsroom research suggests that it is precisely these middle managers who are most squeezed in the move online. Middle-rank editors are the group least likely to feel comfortable with new technology because it creates a challenge to the expertise they have already accrued in their careers. A 2002 study found that editors saw change as necessary for the business interests of the organization but threatening to professional values and standards (Gade, 2002).

The hierarchical culture of newsrooms (Sylvie & Moon, 2007, p.115) is theoretically well-suited to a simple insistence that this is the way the business is now run. But newsroom managers may find that such inflexibility actually militates against the management style that is most likely to facilitate innovation (rather than anxiety) among existing staff (Killebrew 2003, Banks et al, 2002). The evidence explored here suggests that successful innovation will require improved communication in many newsrooms (Sonnenburg, 2004).

Implications of Change on News Work

² Photographers are often left out of the debate about multi-skilling. Their role has been under-researched. An informal survey in 2007 indicated that indeed photographers are now expected to shoot both still and video – although in some cases reporters also were shooting video for their stories (Dickinson, 2007).

So far, we have considered changes associated with the shift to a digital, networked media environment very broadly. This section looks more closely at the effects of shifting technology on information gathering, editing and processing.

Information Gathering

Research on the hiring patterns in U.S. newsrooms demonstrates that the single most common use of the Web is for research. In 2007, 82 percent of communications graduates reported that they spent at least some time each week using the Web to do research; although those working in public relations were the heaviest users, research consumed significantly more time than other Web-based tasks for newly employed journalists, as well (Becker et al., 2008).

When asked to name websites that they most often used, journalists usually referred to the official sites of major organizations--exactly the sort of official sources that they have always used (Davies, 2000; Manning, 2001; Phillips, 2009). Among local newspaper journalists in particular, a very high proportion of original stories originated in tips phoned in by readers. There was unanimous agreement that personal contact is still the best way of finding original stories. In the U.S.-based work described above, Vlad and Becker similarly found that although the Internet was used extensively to generate story ideas, it was not a replacement for traditional strategies.

Journalists seem to be using the Internet largely as a supplemental information-gathering tool. In a recent UK study, all the journalists asked specifically about the sources of stories said they used the Internet for background research, including to locate details and archival material; however, most still depended heavily on direct telephone contact with sources for follow-up and verification (Phillips, 2009). Most of these journalists also mentioned social networking sites,

which clearly had become part of regular research practice. Few news journalists in the UK study mentioned blogs as an important source for originating stories, and many had negative views of blogs (Fenton & Witschge, 2008). In contrast, a U.S. study by Messner & Watson DiStaso, (2008) found that “weblogs have become a mainstream source for the traditional media” (p. 454).

There also may be national differences in training related to use of the Internet as a reporting aide. In the United States, Investigative Reporters and Editors have long offered special weeklong “boot camps” on computer-assisted reporting, and other organizations also have provided training for mid-career journalists. However, UK journalists in a recent study³ mentioned little, and very patchy, online research training. They conveyed the impression that news managers seemed to assume learning about the Internet was a spare-time activity that journalists would simply acquire by osmosis. One of the effects of this unsystematic approach was an almost palpable feeling of anxiety among older journalists that younger recruits may be better informed (Phillips, 2009).

While there is no doubt that use of online databases and the ability to search by keyword through cuttings allow journalists to find and correlate information efficiently and speedily, these efficiencies are in many cases being cancelled out by the need for faster output, of more material, required to fill the “news hole” of a medium with no size or time boundaries (Davies, 2008).

³ Much of the UK evidence for this article is based on qualitative research undertaken for the Leverhulme ‘Spaces of the News’ project at Goldsmiths College. The main body of data is based on in-depth interviews carried out in 2008 with 125 journalists working across a variety of national and regional newspapers and in broadcasting. Some of this research will be published in Fenton (2009).

There is also the impetus to keep up with the competition. The instantaneous nature of web production means that some editors expect every story of any consequence that appears anywhere to be covered on top of the usual round of daily stories and often with a smaller staff due to cutbacks (Greenslade, 2008; Lewis et al., 2008). “There is now such a daily grind of reacting to events and deadlines all the time – it’s an ultra-pressurised environment,” said a political journalist (McNally, 2008). Many British journalists said their editors seemed to take the view that every item that shows up high on Google News should be covered (Phillips, 2009).

Some reporters say they feel unable to do their jobs well. U.S. journalists in newsrooms that experimented early with convergence, as well as British journalists interviewed more recently, are concerned that they are spending too much time in the office and on their computers and are not devoting enough time to meeting people, following up tips and verifying information (Singer, 2006; Dupagne & Garrison, 2006; Phillips, 2009; see also Witschge and Nygren, this volume). The pressures for faster story turnaround vary from one publication to another. In companies where cultural capital has built up over years and a shared understanding of news values is widely accepted, the demands for faster and greater output are usually less intense. Journalists are given the opportunity to carry out research and follow unscheduled stories because that is seen as an important aspect of the title’s brand value. Where the pursuit of economic capital takes precedence over the accumulation of cultural capital (Bourdieu, 2005), speed is more likely to take precedence. One young journalist on a British national daily had written thirteen stories in a single shift (Phillips, 2009), a feat that is only possible if follow-up and research is cut to the bone.

The pressures also vary between local, regional and national newspapers. Local websites may be less affected by the competition to be the first or most comprehensive source because

often, there is only one site covering a geographical area. However, cutbacks in staff numbers may mean that they too are working faster and spending far more time in the newsroom (Lewis et al., 2008). Combined with the tendency of journalists to be hyper-aware of what their rivals are producing, as described above, the effect of this speed-up may be to exacerbate the tendency towards homogenization observed by Bourdieu (2005). A reported practice of out-sourcing reporting of U.S. news to India, where “reporters” simply take information from websites, can only add magnify the issue (Somalya 2008)

Editing and Information Processing

There also is evidence that the Internet is providing an opportunity to do away with copy editors (“sub-editors” in the UK). In Russial’s (2008) study of seventy US newspapers, 50 percent failed to copy edit some or all of their online material. The major reason given was the need for speed. We have been here before. When computers were first adopted, there was talk of journalists inputting directly onto the page without the need for - copy editors to shape the work, cut it to size and mark it for the typesetters. In most cases, that idea was dropped because of the effect on quality (Russial, 1998).

There are also legal concerns. A number of journalists interviewed for the Spaces of the News research (2008) mentioned that the speed of uploading copy made them very anxious about “legals.” One trainee on a major national newspaper had already become the subject of a lawsuit.

There is no reason to suppose that the job of copy or sub editor won’t change in this new environment. In some newsrooms, copy editors are being re-trained to fulfill the role of online video/audio/script editors, providing the multi-skilled link in the chain between video/audio and

text in those organizations that opt for a cross-media rather than an integrated solution. This aspect of the work has had very little attention, perhaps because it is invisible to many researchers. Studies exploring the job of production journalists and the training required to do those jobs are needed.

For larger outlets, particularly where many publications, editions and media have been brought into a single working organization, section editors and copy editors may well become more important. At the most minimal level, Jeff Jarvis suggests:

“There is a need to add context and fill holes in understanding - by using links. As we move from an economy of scarcity in media to one of abundance, there is a need to curate: to find the best and brightest from an infinite supply of witnesses, commentators, photographers and experts” (Jarvis, 2008).

Journalism in a Network

If all these changes weren't enough, the surge in “Web 2.0” capabilities and interest in the mid-2000s has meant that readers now share the media space that journalists and their employers once controlled. Journalists are hardly the only ones producing content for multiple platforms. Users are too – and some of that user-generated content is being disseminated through traditional media outlets such as newspapers (Quandt & Singer, 2008).

Both newsroom workflow and culture have had to adjust again. Here, too, the specifics vary widely. At a few news organizations, journalists are working with users in covering stories. In the U.S., Gannett newspapers have been leaders in this area, recruiting and nurturing users to contribute to both feature areas and hard-news coverage (Howe, 2007). The Huffington Report also made good use of amateur reporters in the run-up to the 2008 elections

However encouraging amateur reporters to work unpaid is not new; so called “community reporters” were being used by local newspapers in the UK before they went online.

The UK media also have been successful in using photographs and video provided by members of the public, particularly in unexpected news events such as the South Asian tsunami, the 2005 attacks in London and, most recently, the Mumbai attacks of November 2008). In Germany, the newspaper is now harnessing the enthusiasm of amateurs who witness and record news events by teaming up with grocery company Lidl to sell basic digital cameras, including software which allows users to upload directly onto a special site for user-generated material at the newspaper *Bild* (McGroarty 2008).

Trawling through written user-generated material, and then fact-checking it, actually requires a huge investment of time and therefore money (Domingo et al. 2008). Indeed it is arguably at least as time consuming as producing original reports from scratch, so most of the routine use has initially come in the form of comments on journalists' stories, columns and blogs (Domingo et al., 2008). Comments are popular with users, but they can be both startlingly abrasive in tone and potentially libelous in content. As a result, news organizations must incorporate moderation processes into their work routines. Whether that moderation is done in-house, outsourced, left largely up to users to oversee or a combination of all these, managing the process still takes time and is yet another task that largely falls on the same journalists responsible for their own staff-produced content -- adding to the pressures that they are already facing in adapting to the new environment.

User-generated content also puts pressure on long-standing journalistic norms. A recent case study of the U.K.'s *Guardian*, for instance, found that although journalists supported the idea of an open platform for free exchange of ideas, the reality posed unexpected challenges relating to authority, autonomy and more (Singer & Ashman, 2009).

The changes mentioned so far have required journalists to adapt existing routines rather than completely re-make themselves. Many of the changes are seen as positive even though adjusting to them has been difficult. But there is widespread anxiety about the speed of change and concern about the loss of reporting skills as older journalists are eased out to make way for more technically oriented younger ones.

New job demands are drawing a generation of young, versatile, tech-savvy, high-energy staff as financial pressures drive out higher-salaried veteran reporters and editors. Newsroom executives say the infusion of new blood has brought with it a new competitive energy, but they also cite the departure of veteran journalists, along with the talent, wisdom and institutional memory they hold as their single greatest loss. (Project for Excellence in Journalism 2008a)

Conclusion

At the beginning is the story we tell ourselves. As research into ideation has indicated, the stories told by different news organizations, with differing technologies and varying news ideologies , are critical to the way in which they approach the task of news gathering. In just the same way, the stories that news organizations tell themselves about their future will dictate the way in which they approach multi-platform working.

Perhaps the worst mistake at this stage of such a turbulent period would be to assume that any news organization has found the right model to take forward. James Curran (2009) points out that predictions about the precise form that new media technologies will take have almost always been wrong, as anyone who invested in Betamax rather than VHS in the 1970s will remember to their cost. Our review of the implications of technological change in news organizations for journalists' tasks and skills has highlighted some trends and many areas where caution is required.

In any period of change, those with the greatest vested interest in the status quo are likely to feel unsettled. A shift from the conventional, hierarchical, top-down management approach, familiar in most newsrooms, may be necessary if news organizations are to take full advantage of changes in technology and work with the grain of the talent available.

While 80% of newspaper editors worldwide say that they anticipate hiring multi-skilled journalists in the future (Newsroom Barometer, 2008), only a minority of journalists currently are working across media. In smaller operations, which tend often to employ younger reporters, multi-skilling may be the best use of staff. In larger organizations, there seems to be little evidence that this is the best way to organize the workforce. It tends to slow things down and to impact quality, as the BBC discovered in its first attempt to merge radio and TV news (Konstantinos, 2008)). This time around the BBC are being wary about multi-skilling (Lee-Wright 2008); they apparently recognize that while some journalists feel comfortable with a range of reporting tools, others work better focusing primarily on one medium. Training for multi-skilling may be best concentrated on those with the greatest enthusiasm and aptitude. Moreover, where technical skills are employed, they need to be used regularly. Without regular practice, the time spent in training may be wasted; , where high quality is considered a priority, differentiation of skills may be preferable

While all the evidence points to the fact that changes in the use of technology are well advanced and will gradually bed down, the research also points to a perhaps more profound question. Many journalists interviewed across a large number of studies have expressed concerns about the erosion of the core values of journalism. Many expressed unease that they were not able to do their jobs as well as they wished, and concern was expressed in particular

about the fact that speed of work militates against the fact checking and follow-up that they believe is essential to differentiate journalists from other web users.

On the internet, all media products are equally accessible. If news organizations are to hold their own, they need to invest in their own brands. This means recognizing that they have a unique product to sell: the regular reporting of trustworthy news. Anyone can write a blog, but it takes trained reporters, properly resourced, to cover everyday events on a regular basis and present it in an accessible manner. Investigation into matters of public importance is arguably even more important – and more likely to require the time and talents of journalists. News organizations need to ensure that they do not lose reporting expertise as they move to take on technically qualified staff.

If reporters are to become enthusiastic agents of technological change, it is important for managers to reassure them that professional values of new reporting will be protected (see Witschge and Nygren, this volume). Without this reassurance, and the commitment to make the promise a reality, the changes described in this article have the potential to fatally damage the product that news organizations are in business to sell.

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