

Digital technologies and a changing profession: New management devices, practices and power relations in news work

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Paper presented at EGOS 2015 in Athens, 1.7-4.7.15.

Introduction

Digital technologies are profoundly disturbing not only news delivery, but also the whole organization of news work. The relationship between digital technologies and news has been investigated especially in media and journalism studies. Scholars in these fields have followed the introduction of digital technologies into news work (Ursell, 2001; Pavlik, 2000, 2013; Saltzis and Dickinson, 2008; Meikle and Redden, 2011, Plesner 2010), and dealt with a range of organizational consequences of this development. In studies of news organizations, it has been pointed out that the question of digital technology appropriation is not just important for technical or economic reasons, but because it affects organizational structures, work practices and representations (Boczkowski, 2004). For instance, reporters and editors must manage market pressures and time pressures in new ways (Klinenberg, 2005) due to the technological development towards a convergent newsroom. Two recurrent themes in this stream of literature treat the topics of changed professional identities and changed professional relations – topics that are central to organization studies.

On the side of organization studies, relatively little attention has been given to the ways in which digital technologies take part in reshaping news production and journalism (for some exceptions, see e.g. Czarniawska, 2011; Raviola and Norbäck, 2013). This is despite a mounting engagement with the role of (digital) technologies in organizations and organizing processes (Orlikowski and Scott, 2008; Leonardi, 2007; Plesner and Gulbrandsen, 2015; Zammuto et al., 2007). But as media and journalism studies show, news production is an empirical setting with particularly rich

and fruitful opportunities for organization scholars to investigate issues of professional work and changed professional relations, especially with regard to the role of digital technologies.

The purpose of this article is to investigate what role particular new devices play in the development of a profession in an organizational setting shifting to new technologies, with particular regard to changed professional relations. The context under empirical investigation is public service TV news production and the professional group studied can at large be defined as journalists. The article builds on a qualitative study at Denmark's Radio, the national Danish public service broadcaster. In particular we have focused on the organizing of the production of the two most important TV news shows, broadcasted daily at 18:30 and at 21:30.

To address our research question, we turn to the literature on professions to link the present knowledge about professional work to the empirical issues relating to reorganization, and to position our study in relation to this literature. To be able to highlight technology's role in the type of reorganizations mentioned above, we then draw on Actor Network Theory's idea of the distribution of agency among human and non-human actors and thus introduce the theoretical backdrop of the article. Then we introduce our qualitative methods and the case. In the analysis, we treat two phenomena, the news table and the news concept, as management devices. In the conclusion we reflect on how these management devices both act as realizers of a news strategy, and have other organizational consequences as they produce new practices, power relations, and even a new kind of professionals.

Theoretical framework: Professions and digital technologies

Professions

Professions make up one of the modern societal institutions. They have traditionally been defined around human agents and their knowledge, ethics and autonomy (e.g. Wilensky, 1964; Freidson, 1973; Sarfatti Larson, 1977; Klegon, 1978; Abbott, 1988). Much attention has been paid to the institutionalization (e.g. Freidson, 1986; 2001; Greenwood et al., 2002; Mazza and Strandgaard Pedersen, 2004; Scott, 2008) – and

deinstitutionalization (Toren, 1975) – of professions, as a strategic move of a group to acquire and maintain power, control and status over society.

The ample sociological literature on professions and professionalization (e.g. Carr-Saunders and Wilson, 1933; Wilensky, 1964; Moore, 1970; Sarfatti Larsson, 1977; Freidson, 1973, 1986; Abbott, 1988; Halpern, 1992; Schleef, 2006; Scott, 2008) describes the role of professional identities and ideologies in organizing everyday work, and demonstrates how identities and ideologies define fields of expertise, provide their members with ethical norms, and prescribe what to do under various conditions. Several scholars identified common elements of professions (Greenwood, 1957; Wilensky, 1964; Goode 1969) in their systematic theory, their authority and autonomy and their ethical code. Freidson (1973) and Sarfatti Larsson (1977) emphasized the gatekeeping activities of professions as the origins of professional control and power.

Less attention has been paid to the daily work of professionals within organizations and to their professionalism in practice (Lounsbury, 2007). Professionals working in organizations often experience a tension between their ambition of autonomy and public service and the organization's management, striving for control and commercial success (Kornhauser, 1962; Engel and Hall, 1973; Sarfatti Larsson, 1993).

Turning to media studies, empirical research has shown how the introduction of digital technologies in the newsroom has consequences for professional identity. They have produced new occupational categorizations, as for instance 'the web people' who are opposed to 'the news people' (Huang and Heider, 2007). Also, they have produced new professional profiles such as 'the media manager' (Aguilar-Gutierrez and Lopez-De-Solis, 2010). Nikunen (2013) showed that technological skills and youth were characteristics needed to compete in the changing media markets, and that older journalists struggled to hold on to their professional values and notions of expertise. In her study it was argued that these 'older' journalists had difficulties in bringing their expertise into use in the new technology-centered newsroom structure (Nikunen, 2013). It has also been shown how journalists compare their type of expertise as a "non-linear," "iterative," "interactive," and "network" modes of thinking to – and contrast it with – the more old-fashioned expertise of traditional (broadcast)

journalism (Boyer, 2010). By contrast, we also learn about journalists who are concerned with how technological convergence affects the quality of their work negatively (Smith et al., 2007), and who engage in the defense of expertise through reference to ‘serious, old fashioned reporting’ – as opposed to its purported occupational opposite, news aggregation (Anderson, 2013).

The issue of professional identity as interwoven with processes of technological and organizational changes – obviously relates to the issue of professional relations. In news organizations, also professional relations seem to be changing with the introduction of digital technologies. For instance, new hierarchies arise. A study of the incorporation of new technologies into the news production routines documented how laborers with technological skills were privileged in the organization, and how this changed hierarchies and produced labor-fed tensions (Robinson, 2011).

Also, several studies have documented tensions between news workers and their bosses (Smith et al., 2007; Huang and Heider, 2007). Tensions exist between professional subgroups and the organization as a whole, where managers are obviously seen to represent the entire organization and news professionals identify with so-called ‘cultural in-groups’ (van den Bulck et al., 2013). Along the same lines of inquiry, conflicting discourses have been identified: A professional discourse legitimizing journalists as an autonomous and self-regulating group, opposed to a managerial discourse, suggesting a business thinking common to other industries (Anderson, 2013).

Together, these contributions from media studies confirm that digital technologies in the newsroom have implications for the profession of journalism. We wish to interrogate the relationship between digital technologies and a changing profession in more detail, with a focus on how technology, organizing and professional work are interwoven. To that end, we draw on a symmetrical and agnostic approach to technology.

Digital technologies and organizing

Organization theory has been interested in technology for a long time and in a number of different ways. Studies of technology’s role in organizations first appeared in the

writings of authors like Woodward (1958) and Sayles (1958), and became central to contingency theory (Perrow, 1967; Galbraith, 1973). More recently, organization scholars theorizing the notion of sociomateriality have sought to recover the 'lost' concept of technology (Orlikowski and Scott, 2008). Despite the continuous interest in the relationship between technology and organizing (Barley, 1986; Orlikowski and Scott, 2008; Leonardi et al., 2012), few studies investigate the intersection between technologies, professions and organizing. Hence, it is the ambition of this article to position itself in this intersection, by shedding light on the role of technologies in defining or changing professional groups and their work, particularly in the context of a public service broadcaster's newsroom.

To highlight technology's role in organizing, we build on a basic assumption of Actor Network Theory, shared by organization scholars working with sociomateriality. Latour (2005) and other Actor Network Theory scholars assume that the social is a dynamic system of associations between humans and nonhumans. Callon (1986) and Latour (1986) thus prompt us to raise the issue of nonhuman agency in organizational life, arguing that organizations must be analyzed as assemblages of humans and nonhumans acting on the same level in organizing networks.

These theoretical assumptions lead to a symmetrical and agnostic approach to our empirical material, telling us to have an eye for both human and non-human agencies, and not privilege humans as the only active part in creating reality, or, in this case, new practices and relationships among journalists. We will thus look at the reorganization of a profession as a phenomenon co-created by technologies, humans, and possibly other elements. In the following analysis, the symmetrical and agnostic approach leads us to focus on two devices and their role in the reorganization of news work, and hence their agency in relation to the reconfiguration of the journalistic profession. One device is a digital coordination tool, whereas the other is a concept conceived by management and inscribed in various technologies and situations. Both devices carry managerial intentions, but from the perspective of ANT, to look at the role of technology is thus not simply to examine how organizational members put technologies to work to achieve their goals. The technology has agency, too. As we will see in the case of the two devices, they partly perform the role that management hopes for, but they also play a maybe unrecognized role in transforming professional relationships and practices.

Methods

The present article is based on a study applying various qualitative methods to shed light on the relationship between digital technologies, organizational changes, and changes in professional identities and relations.

The first part of the study consisted of observations of work practices in the newsroom. We spent four whole days of on-site observation following the production of the 18.30 news and the 21.30 news. This amounted to 48 hours of observation. The observations gave us an understanding of what present day professional news work consists of, and provided a foundation for conducting subsequent interviews with the involved producers, editors, anchors, and managers. We both had informal talks and conducted semi-structured interviews. The second part of the study consisted of eleven interviews, lasting between 30-60 minutes. All interviews were recorded and transcribed. The themes guiding the interviews were organizational changes, professional relations, professional identities, and technology use. The main part of the interview questions were open, asking for accounts of work experiences, work practices and work relations – and more specific follow up questions relating to the themes were asked. Our interest in the relocation and reorganization of the organization arose from these interviews, and we conducted a large document search and analysis to obtain information about its historical development.

In our production and analysis of all the material, we focused on what happened at DR News with the physical relocation of the broadcasting company, as it seemed from our conversations with practitioners that this relocation became the occasion for a new strategy that included new technology and a fundamental organizational change.

All observation notes and transcriptions were coded in Nvivo. In the first instance, we established two themes to look for, namely technology and profession. As the coding work progressed, we established a range of sub codes, and became particularly interested in two sub codes revolving around ‘the news table’ and ‘the news concept’. They were not just technologies of coordination or communication, but seemed to play a vital role in the reorganization of news production and the establishment of a

new matrix structure. The matrix organization was also established as code, and we analyzed the whole material by asking 1) how were the news table and the news concept interlinked with the reorganization into a matrix structure? And 2) with which consequences for professional relations? We have chosen to conceive of the news table and the news concept as ‘devices’ that management uses to organize news work practices. This is in line with Callon’s analysis of ‘writing devices’ as highly effective management instruments. Callon states that they

“make it possible to integrate a large number of actors and variables into decision making. And these devices can be multiplied as need be. They respond to the dynamics of increasingly complex systems of action, but they also make it possible to coordinate different points of view, expectations, and behaviors” (Callon, 2007: 212).

In our case, the news concept can be seen as one such writing device, interacting with digital devices such as the news table and the news wire.

In the following analysis, we examine these two devices according to the same structure, focusing on how they were conceived, how they are used and interpreted, and how they have consequences for professional identities and relations.

The case

TV news production might be seen as a technology-dense environment and the creation of a TV news show could not be thought of today without a number of digital technologies, shared and used by different professionals in different ways. This makes news production both a highly haphazard and yet technologically complicated process of deliberate construction involving the interweaving of reflexive professional journalists as well as developing, unpredictable technologies (Hemmingway, 2008). Thus, we think it is particularly interesting to investigate how the profession of journalism has developed in a public service broadcaster’s newsroom shifting to new technologies. This context raises a number of questions, related to new kinds of professional work practices and relations in a new technological setting.

DR (previously known as ‘Danmarks Radio’) is the Danish national public service corporation, founded in 1925, bringing news and entertainment through TV, radio,

Internet and mobile platforms¹. DR is regulated through the Radio and Television Law² and is obliged to fulfill the role of a Public Service media enterprise. The organization has around 3.400 employees organized in a range of editorial sections that secure programs and content to all of DR's media³. In recent years, DR has faced increased competition from other TV channels, and 'the digital revolution' has changed the material and technological conditions that have come to underpin news production.

These conditions are made very visible in connection with a physical relocation of DR, because the most recent technologies could effectively be implemented in connection with the organization's move to a newly built physical setting, 'The DR Village' in Copenhagen. In 2006-07, all media production units (TV, radio, web) were gathered here, and this became an occasion for a new organizational strategy under the headline 'One DR'. Following the appointment of the present general director in 2010-11, a major change of DR's TV channels was effectuated. In Fall 2012, the flagship, DR1, got a new profile. The following analysis of the strategic reorganization of news production should be seen in the context of this major organizational change.

When DR moved to new premises, a number of changes were introduced in the organization of news production, too. With regards to content and delivery, the news were supposed to be in line with DR's overall brand, and with regards to resources, news work should be based on much more sharing and collaboration – through breaking down divisions between hitherto independent editorial sections.

Occasioned by the move to a shared newsroom (from geographically dispersed localities and completely disconnected news production practices in different sections), management decided to implement a matrix structure in the organization of news production. Earlier, a given news program would be produced by its own editorial section consisting of a rather large collective of editors, reporters, producers, technicians, anchors, etc. In the new structure, small output units would be responsible for the delivery of the various news formats, for instance the 18.30 TV News, the 21.30 TV News, the radio morning news, or the web. Input units would produce the content, organized around the different themes of news, such as foreign affairs, domestic affairs, economy, etc. Input units would deliver content for several

output units, so that each news program would not have to work on the same material in parallel – but could draw on the same input resources. Output units would not have their own staff to produce content, but would play a defining role in selecting and shaping stories.

[Insert figure 1 and 2 around here]

Although the matrix organization of news production has been a fact for almost a decade, it has been continuously adjusted. This radically new way of working has created new needs for support functions, for moving around employees, for reorganizing the news management, for using digital technologies, for developing concepts to collaborate around, etc. These developments have had observable effects in a number of domains; they have seriously challenged organizational cultures, they have had implications for layoffs and recruitments, they have reshaped the news products and demanded new daily routines.

In the following analysis, we have chosen to focus on two mundane devices that are intertwined with the introduction of the matrix organization in the sense that they are fundamental to making the matrix function. The first is the so-called news table, and the second is the news concept. These devices are interesting because they create a particular type of collaboration, and particular relations between the professionals of the news organization. This analysis will allow us to discuss the interplay between digital technologies, reorganization, and new professional practices and relations.

Analysis: the news table and the news concept as management devices

The digital newsroom and its devices: the news table

The functioning of a newsroom is obviously dependent on a number of technologies. In this part of the analysis, we will focus mostly on one technology, the *news table*, which is central to collaboration in the matrix structure. To understand this as an organizing device, we will account for how it was conceived, how it is used and interpreted, and how it has consequences for professional work practices and relations.

Conception

The news table is an online platform, where so-called ‘shared stories’ are listed. These are topical stories that most news platforms would normally feel obliged to produce. In the previous organizational structure, the radio and the various TV news formats would not coordinate the production of such stories, so sometimes 8-10 journalists would be working on the same story, and several crews with heavy and expensive broadcast equipment would travel to cover the same event⁴. With the introduction of the news table, a newly established news center works on these shared stories and delivers content that all platforms can use. It is hence an organizational entity separate from the output and input units, working to secure that the most important daily news are always covered. The news table links to the so-called Media Archive, another new technological platform, where all raw material produced or collected by the whole organization is stored. Recently, the manager of the news center has been given the authority to select a top story that needs to be covered by all platforms, and to prioritize three other stories. They appear on the top of the news table, followed by other stories produced by input units. All employees can access the stories via the platform, use their footage, access facts, and see how the story has hitherto been covered.

[Insert figure 3 about here]

Use

Digitalization has obviously radically changed how news material is produced, stored and delivered. In principle, much editorial work in the newsroom could be done from a desk with a computer – for instance picking up stories from the news table. However, the former small offices belonging to individuals have been replaced with a gigantic open newsroom. Here, the news center and a large screen with the news table’s selection of prioritized news are placed in the center so that everybody walks by and relates to these units. Editors and reporters constantly meet physically around screens showing the news table, point to the screen, click their way around the stories, discuss evidence and check on the progress of reporters in the field⁵. As an editor puts it,

“If anything sudden happens, I walk over there just like everyone else, going ‘are we moving on this one, who do we send?’”

When observing the long days of evening news production, it is obvious that there is a lot of activity around the news table. A particular news show is relatively dependent on the news table and the content produced by the news center and the input units. Although the news table frees up resources – because fewer people are in the field to cover a given event – it also creates a great demand for cross-unit collaboration. The open space of the newsroom and an increasing number of meetings are meant to facilitate this close collaboration. The news table is hence a central device in the matrix organization, because although much of the material is produced and prioritized by the news center, input units also contribute with stories and material, and obviously, output units are very dependent on all this material, because they no longer have their own production crews, only a few reporters.

Interpretation

The implementation of the news table, and the associated media archive and news center, was met with some reservations. The idea of rationalization of the basic news production and the sharing of content brought along the problem that things could no longer be hidden⁶: In the time right after moving into the new premises and the shared newsroom, editors and journalists would try to hide stories from their colleagues, rather than share them⁷. It took time to negotiate what the benefits might be of giving away material and giving away control over the production of content. This was bound to be an issue for journalists with a love of solo stories and a habit of working in a silo structure. As one anchor puts it,

“Since news became digital...It has been a demanding exercise to collaborate, to share, to trust, to work rationally with... the rationalization of work flows, not just to save money, but to deliver something else, of higher quality”⁸

One manager addresses the issue of secrecy and quality by stating that more mistakes are discovered now that more people have access to the same data collection and sharing platforms, and many more people engage with the same material. She also emphasizes the uniqueness of this aspect of the matrix structure – colleagues travel to DR to study how this works⁹; the dismantling of journalists’ sense of ownership in the name of sharing.

Over time, more people have bought into the idea of the matrix organization and its devices.

“Well, it is about understanding your role in that matrix [...] I guess the great thing about it is that I receive something which is not me, 37 years old, with my perspective and my little family and my views on these issues... Instead, I am surrounded by other people, who have other voices, who go ‘hey, this is not a story’, or who say ‘you ought to do this’”¹⁰

This editor was not the only person interpreting the outcome of the matrix organization in this way. Also managers, editors and other professionals were very articulate about how resources and decision-making had been redistributed, and what this meant in practice. The general image was one of give-and-take; they may have lost manpower or decision-making power, but rationalization has given new types of resources on the input side, and the constraints set up by the matrix frees creative energy to operate within this new and tighter room of maneuvering.

Consequences

As it has been indicated, the reorganization around the news table and other digital technologies has had consequences for both professional work practices and collaboration.

The shared production and storage of news implies that collaboration about the meaning of a story is much less determined by an individual journalist or editor, and much more by a collective of input and output people, where management has a direct access to the stories under production, as well as constant interaction with the producers. In the matrix structure, input people do not determine if, when and where their story is used. Output people take such decisions, but they are dependent on other’s input. In this situation, input, output, news center and managers constantly negotiate about content, form, resources, etc. The resources freed by the avoidance of parallel work on the same production are put into this collaboration, which centers around the quality of the journalistic product – more than earlier. Editors tell about how they have relatively less power today, than 10 years ago¹¹, and an anchor tells about his experience of this shift:

“We are much sharper today when we put together a news show. Before, the quality of the shows was really uneven. If we had an editor on duty who had some personal preferences, a love of sirens and traffic accidents, then this could be the top story of our news show, regardless of what our strategy might be...The editor of the show was the king or the queen of the day”¹²

While this has changed, the editor can still be seen as part of a quite powerful team. The leading team responsible for the production of the two TV news shows we studied included three people: an editor, an anchor and a producer. They sit together in a group of four desks – two in front of the other two – with the editor and the anchor on one side and the producer and an assistant or a graphic designer on the other side. From this position, they steer what happens in regards to the evening’s show, by assigning tasks to different professionals sitting in other parts of the newsroom. During the day, the leading group becomes a point of frequent visits from the other professionals who have been called up to work for that specific TV news show. It is clear from the interactions that input people need to sell their stories to the output units, or to negotiate about the details of the delivery of the story¹³.

It seems that the digital newsroom and its devices calls for a particular type of collaboration and coordination – among hitherto separate platforms for news delivery, and with an unprecedented level of sharing and collective decision-making. In the analysis above, the role of management has not been as evident as it is in the daily practices of news production. We observed that management is very present in collaboration and coordination, both by being centrally located in the newsroom, by phoning editors and coming by the work stations, and by managing through a news concept. The next section will describe the features and functions of this device.

The news strategy and its devices: the news concept

Just like the functioning of a newsroom is dependent on a number of devices, so is the realization of a news strategy. In this part of the analysis, we will focus mostly on one device, the *news concept*, which is another central device for the collaboration in the matrix structure. To understand this as an organizing device, we will account for how

it was conceived, how it is used and interpreted, and how it has consequences for professional work practices and relations.

Conception

The abundance of free online news offered by a range of players in the media industry and beyond has created an increased competition for media users' attention. To meet this increased competition, the strategy of DR has been to create a more distinct news product, which it is possible to recognize – as a quality product – in a chaotic media landscape. A very important device in this strategy is the news concept, launched in 2012 by the news management. Several years before this, various people had worked on improving the quality of the evening news shows, apparently without great success¹⁴. At least, many kinds of employees recall a low quality of news, a low level of engagement, and a difficulty with recruiting talented people¹⁵. A new member of the news management was asked to dedicate his time to the development of two concepts for the two evening news shows, and he did this in collaboration with colleagues. The result was a binder with a detailed account of the structure, type of content, graphical design, and other elements that make up a news show. It is stipulated here how many seconds a given type of story may fill out, and how the change from one story to another takes place. At the same time, only a very limited number of people were allowed to appear on the show as anchors or correspondents. The idea was that a DR news show would be immediately recognizable, and always delivered with the same quality.¹⁶

[Insert figure 4 around here]

Use

Every morning, when the editors begin working, they open the so-called newswire software, where the parts of the news show are pre-programmed in accordance with the news concept. For instance, there are slots for the 'top', 'news', 'body', 'report', and 'ending'. After the morning meetings among staff from input, output and (in the case of the early news) news center, the editor immediately begins to fill out the slots. At the morning meeting of the late news show, the structure is also drawn upon a whiteboard. Throughout the meeting, the editor fills it out as decisions are taken about which stories to acquire from the input units¹⁷.

As we observe the news production throughout a news cycle, many references are made to the news concept, both by editors and managers. The editors make many decisions on the basis of the concept. For instance, we observe a discussion about an ongoing production of images and the possibility of combining these images with graphical illustration containing numbers, and an editor says “well, we have very strict concepts regarding that”, and encourages the reporter to think about an appropriate visual background for the graphics. At another occasion, the editor tours the editorial suites to check up on the ongoing work on different stories. She tells a reporter and a technician that they need to cut out any image of the reporter, as he is not one of the correspondents authorized by the concept. The reporter protests mildly, arguing that a rather neutral image of his back makes no difference, but the editor insists.¹⁸

Each night concludes with a meeting of all the contributors to that night’s news show, where one of the TV news managers gives feedback. This feedback is tightly connected to the news concept and how well each story – as well as the whole show – adheres to the concept. At one feedback session, we observed how the manager gave praise to a story, interpreting it as a good example of how the use of correspondents stipulated by the concept raises the quality of the product¹⁹.

Interpretation

In the opinion of the managers, the news concept is precisely an occasion to repeatedly evaluate and articulate how well employees succeed in living up to the strategy. The evening feedback is used to reiterate what the concept is about, and why the news production needs it. As one manager puts it, “sometimes I feel I have been talking about that strategy constantly for the past five years. But well, I believe in that”²⁰.

The very tight concept is both interpreted as limiting and productive. With regards to the limiting effects, an editor tells how

“The most difficult thing about it is the fixed elements that you need to squeeze in between your stories. Sometimes when you would really like to spend some more time on this one, you are challenged by time because you need to fit in all those little items.

That's the difficult part. Then the best thing to do is approach your boss and ask 'I think we should do like this, can I do that?'"²¹

As we see, the editorial independence is effectively dismantled by the concept. If it is to be bent slightly, this requires managerial approval (in the quote above 'the boss' is the editor in chief of the TV news, not part of top management). This has caused some dissatisfaction, but many employees have come to appreciate the tight limits and take responsibility for living up to it. For instance, one editor believes in staffing the output units with very few people, simply to reduce the risk of stepping besides the concept.²² The editors talk about the advantages of 'dogmas':

"We have never worked with such a tight concept before. It is like having dogmas, it is really nice to work with because it forces you to make choices. And that's always the hard thing. Also for the bosses themselves. I feel like I am the guardian of this, maybe [managers] want... "Well, can we squeeze this into a news story?" No, not if it ought to be a longer story, then we cannot tell it in one minute and 15, we need to cut it out. It forces us to edit with more edge and courage"²³

It seems that many people are ready to accept the tight control because of the resources released through the realization of the matrix structure and the prioritization inherent to the news concept. They observe that the resources are channeled into the production of original stories that sometimes become agenda-setting and thus contribute to DR's ultimate goal, to deliver valuable public service²⁴. The concept also becomes part of the construction of a professional hierarchy because those closely connected to it lend authority from it:

"We have reduced the team a lot, and this was not driven by any form of coincidence. As an instrument to increase quality, secure that our news are recognizable and avoid a sloppy way of working with the concept; a small group of people with the same mission, and the best"²⁵

Thus, as this anchor states, people in the newsroom seem not only to accept the downsizing of the editorial team responsible for the actual production of the news programs, but also to explicitly recognize that the "small group of people with the same mission" is also the best. They do that in the name of a better realization of their mission, that is, public service.

Consequences

Like in the case of the news table, the news concepts have visible consequences for collaboration and power relations. Earlier, collaboration would almost exclusively be an issue within the particular editorial sections, and would be based more on individual professional judgment and ad hoc decisions. With the matrix structure, new necessary collaborations across input and output units demand new types of negotiations, and the news concept creates rather strict limits about what can be decided. It is activated as a very powerful element in closing a discussion or making professional choices.

The news concept is thus instrumental to a more centralized control of news production, and creates a tighter connection between management and output units, who need to be aligned to make the concept work in daily practice.

The news concept (as part of the matrix organization) also creates new types of journalistic professionalism. To make a recognizable, standardized product, the news organization now has fewer independent journalists delivering the final product. Instead, the functioning of the concept depends on people who are deemed best at ‘telling the story’ and ‘connecting’ to viewers. The output units thus play a very large role in shaping the product, and other journalists can only hope to sell their stories to those central players. Then again, ‘storytellers’ no longer find and develop stories themselves, and input people have a unique opportunity to work on stories of their preference, with less regard for the daily grind of news production.

Discussion

Through the physical setup of the newsroom and the collaboration around a number of devices, like the news table and the news concept, the emergence of new kinds of professional work practices and power relations in news work become very visible.

We recognize three shifts in particular:

1. An increased collaboration among journalists and interaction between managers and output journalists.
2. A delegation of mundane work and power to technological devices.

3. An increased standardization of the news products.

An increased collaboration

We have observed an intense collaboration among different journalists and between journalists and managers, both around the news table and around the news concept. In particular, the news table seems to draw people towards it and offer a space for (or perhaps enforce) negotiations among journalists. Like other scholars, we have found that digital technologies significantly shape journalistic work practices and categories of media workers (see Huang and Heider, 2007, Nikunen, 2013). What our study highlights, however, is that the news table can be considered a journalistic and a management tool at the same time: On the one hand it focuses the discussions among journalists on news and their priority – and recognizing and prioritizing news are considered to be the core of their profession. On the other hand it rationalizes and standardizes the journalists' efforts to cover the main news of the day. The use of the news concept also produces many interactions between the news management and output journalists. Their closeness around this device seems to produce a blurring of the boundary between journalist and manager, because they continually discuss and enact the strategy together. In the new newsroom, there also seems to be a more intense collaboration between technicians, journalists of different kinds and anchors for the production of a common DR news product, and this is facilitated by both news table and news concept.

We have thus observed that journalists and managers are no longer two very distinct groups, as media scholars (Smith et al., 2007; Anderson, 2013; van den Bulck et al., 2013) and sociologists of professions (Kornhauser, 1962; Engel and Hall, 1973; Sarfatti Larsson, 1993) have traditionally portrayed them. Rather, we see a continuum of types of journalistic professionalism. At one end of the continuum, we see the more traditional, independent journalistic professionalism, of the kind that the scholarly and Hollywood literature has made us accustomed to, and at the other, we see professionalism in a form where the understanding of the organization's challenges and strategies is a defining element in that professionalism.

A delegation to technological devices

The news table and the news concept are linked to different technological devices, like the news wire. In making a difference for how those other devices are structured, they take up part of the organizing work that was previously conducted by journalists. The news table, for example, gives a standard prioritization of the first four news items of the day and offers a shared treatment of these items. The news concept 'decides' how the news product is to be organized every day by standardizing it and eliminating possibilities of deviance from that standard.

Delegating such tasks to technological devices implies that journalists have more time to concentrate on how to narrate stories, given their priority and format. Some journalists consider this an improvement as it gives them time to do what is considered one of the core skills of journalists.

Apart from the centralization and rationalization of some logistic work, like organizing travels of reporters to cover news, some of the strictly defined journalistic work has also been partly delegated to devices, like for instance prioritizing and formatting the news. This confirms the idea that in the newsroom, borders between journalism and management are sometimes blurring, but it also introduces the idea that professional autonomy, independency and exclusive knowledge becomes constrained (Sarfatti Larsson, 1977; Freidson, 1973, 1986; Abbott, 1988). On top of this, while devices allow management to implement their news strategy, they also become powerful themselves, and come to act both with and against managers when decisions are to be made.

This observation of the unexpected power effects of devices resonates well with the theoretical backdrop of this study. Actor Network Theory would tell us that power is not a thing possessed by particular powerful actors, but comes about when many actors associate around a given element (Latour, 1986). And this is precisely what happens with the devices. The devices have been launched as items to collaborate around, and while this certainly takes place in practice, they also produce much more than collaboration. This could not have been predicted, because devices only become productive and powerful when other actors attach themselves to them and thus energize them. As Latour would say, these devices have no 'inner forces', but their possible power is dependent on the energy given to them by all the actors surrounding them – power is thus distributed between actors (Latour 1986, 266-67). The

attachment to the devices becomes an important element in what we consider a standardization of the news products, with consequences for professionals' power and control (Freidson, 1973).

An increased standardization of the news products.

Strengthened by higher audience ratings and a seemingly improved organizational climate, new devices like the news table and the news concept have managed to attach a lot of supporters to themselves. We can see at DR that journalists, technicians and managers have become increasingly loyal to the new concept. This marks a move from the independent professional journalist to the dependent organizational journalist, who has to collaborate with others to be able to work and rely on the given device to perform this collaboration. The analysis thus both shows how work is organized around shared devices in the newsroom, and how the streamlining and standardization of news table and news concept have created new power relations in the organization. Previously powerful positions have been dismantled and new relations of power have emerged. Instead of being concentrated on certain people, power becomes distributed in the newsroom and seems to lie in the relationships among professionals and devices. The news concept, for example, seems to prevent not only journalists but also managers to make free choices and deviate from it. As one of the editors said, the output journalists are themselves guardians of the news concept, even against the bosses. So this is another aspect of power, that it is distributed in a network, rather than leaving the professionals in charge of fully and exclusively controlling access and practice (Freidson, 1993; Abbott, 1988). In the terminology of Actor Network Theory, we may say that power is delegated among humans and non-humans. As Latour (1990) argues, it demands much less effort to have intentions inscribed into material or technological artifacts, than to have human actors and conscious decisions to do all the work. This point is visible when we see the news concept as acting more powerfully than individuals, and playing a central role in the standardization of the news products and the associated changes in the professional practices of journalists.

Contributions

On the basis of our analysis, we propose that devices such as the news table and the news concept are central to the reorganization of news work, as they function as organizing devices around which collaboration takes place. As such, they realize managers' strategies, just like they produce new professional journalistic work practices and power relationships. We thus conclude that journalism as a profession evolves in an organizational setting shifting to new technologies. Two developments stand out. First, TV news journalism is becoming less individualistic and more collective. Second, professionalism becomes a matter of understanding and realizing the news organization's strategy, rather than following a more individual agenda.

A new type of professionalism has been constructed – by management – as a necessary element in a strategy that must take into account 'the digital revolution'. Digital platforms such as Facebook, Twitter and YouTube are creating serious challenges for the whole news industry, as they provide increasingly popular individualized news. The new strategy has also guided management in layoffs and recruitments, so in that sense it is very visible in the organization how the analysis of the competition produced by digital platforms result in new collaborations and the demand for a new type of journalistic professionalism.

On the basis of our findings, we argue that to understand current developments in (journalistic) professional practices and relations, we must look beyond the literatures on professions. With inspiration from sociomaterial approaches and the empirical work of media studies, the article offers theoretical reflections on the relation between digital technologies, organizing and professions, which contribute to both media and organization studies. We show how the digital newsroom organizes professional practices and relations in new ways and the digital revolution (the explosion in online news) creates a whole new professionalism, which is vital to strategy formulation in the broadcasting company of the digital age.

We can summarize our contributions in two main points. Firstly, in contrast to previous research, our study shows that profession (journalism) and management are not opposed to each other, but rather can be seen on a continuum on which journalistic and managerial tasks become intertwined. Secondly, rather than supporting the idea that technologies make managers more powerful, our study shows that the increasing digitalization of news work and the related introduction of new

digital devices does not make any particular group or person more powerful. Rather power is distributed across a network of people and things, which has come into place in relation to the new devices. Having delegated some tasks to the devices, neither the managers nor the journalists acquire more power in the digital revolution, but rather the new arrangement increases the dependency of all the newsroom members on each other.

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Figure 1. The previous structure in news production. News production was organized in divisions around each news show – so employees worked in a given editorial office in shifts to produce input and deliver the news.

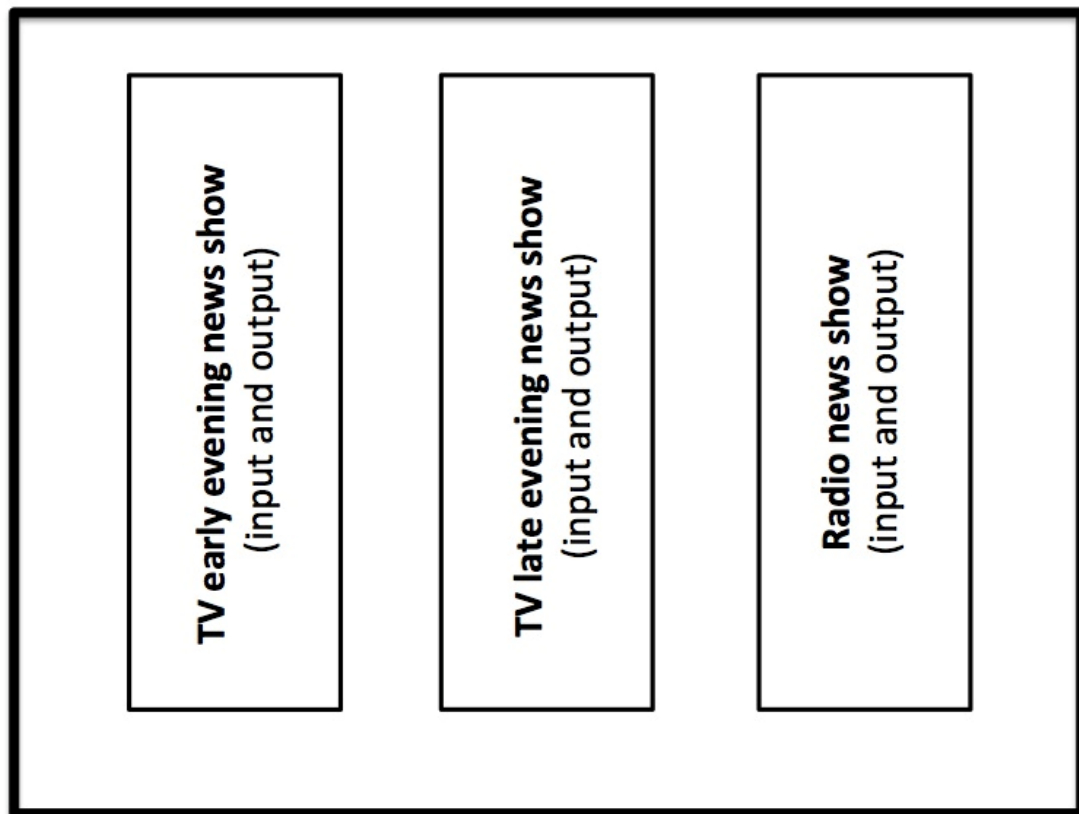


Figure 2: The new matrix structure of news production. Small output sections deliver the news. Employees are hired based on their abilities to tell stories. Input sections deliver the material for the show. The news concept and the news table play a major role in governing the interactions between input and output sections.

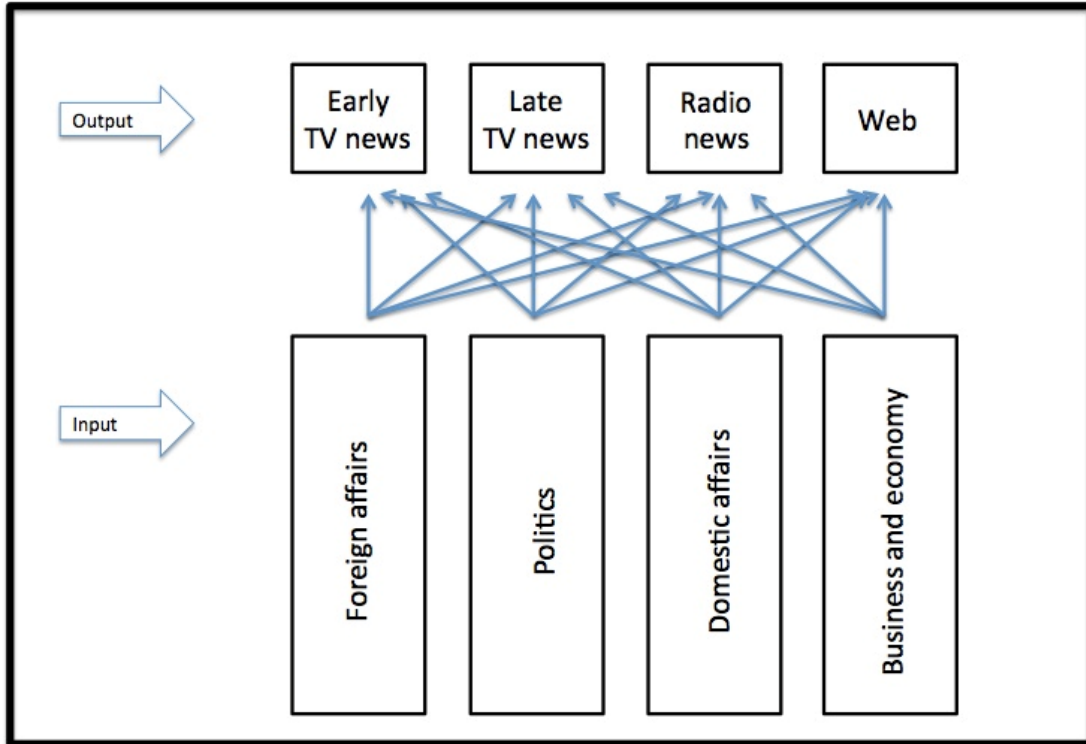


Figure 3: The news table. Everybody has access to this database with shared stories. The news center chooses the three top stories that must be covered on a given day. Background material, comments and digital recordings can be found here, and the validity of facts is sometimes debated. On the second screen is the so-called run-down, a structure for a given news format which is filled out with the stories of the day. Types of stories and their length are pre-defined but can be changed slightly.

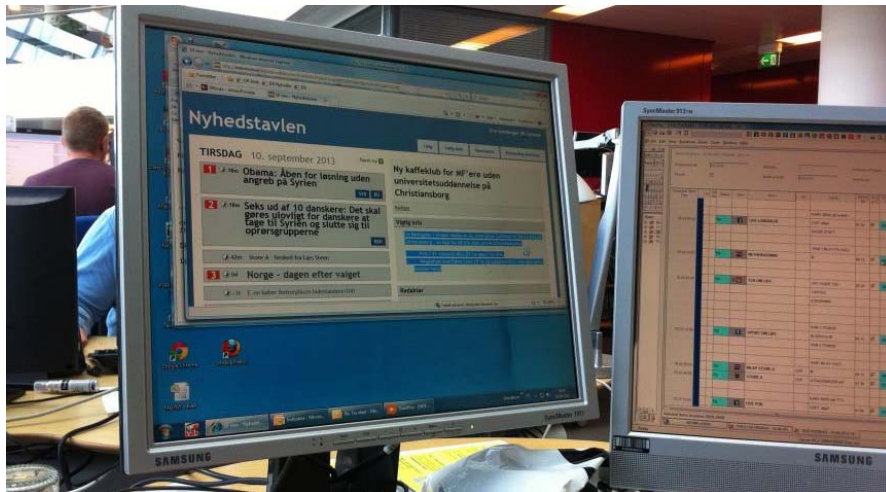
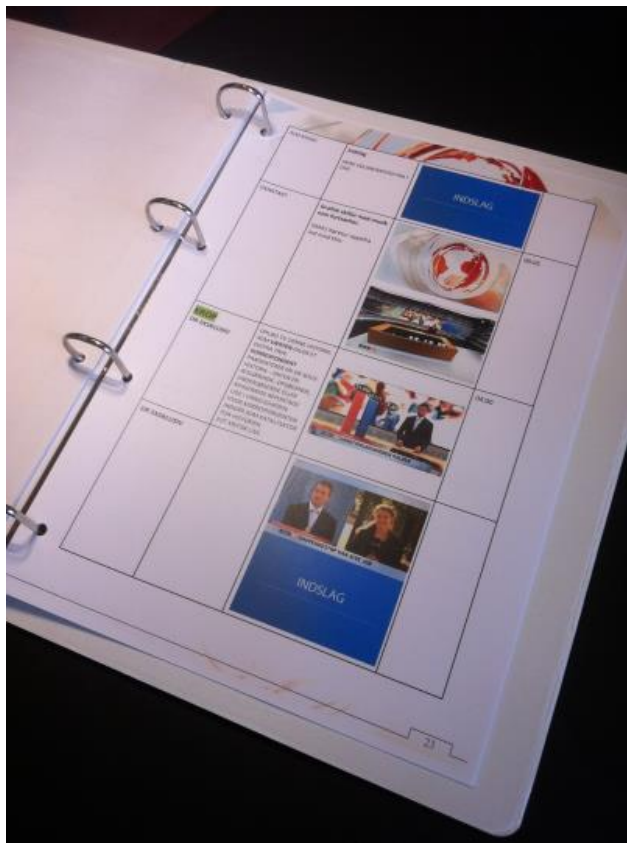


Figure 4: The news concept. This is a binder visualizing the sequences of a particular news show. It details the structure of the show, the types of stories, the design possibilities, the camera angles, and the types of anchors or correspondents used.



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- ¹ DR Internet homepage
 - ² Lovbekendtgørelse nr. 338 af 11.04.2007
 - ³ DR Internet homepage
 - ⁴ Interview, head of foreign affairs (in 2013), TF
 - ⁵ Observation notes, Fall 2013, Spring 2015
 - ⁶ Interview, producer, PG
 - ⁷ Interview, editor, ES
 - ⁸ Interview, head of foreign affairs (in 2013), TF
 - ⁹ Interview, manager, NN
 - ¹⁰ Interview, editor, MM
 - ¹¹ Interviews with editors, MM and ES
 - ¹² Interview, head of foreign affairs (in 2013), TF
 - ¹³ Observation notes, Fall 2013 and Spring 2015.
 - ¹⁴ Interviews with editors ES and MM
 - ¹⁵ Interviews with editors, managers and journalists
 - ¹⁶ Interview with managers, JE and NN
 - ¹⁷ Observations, Fall 2013 and Spring 2015.
 - ¹⁸ Observations, 21.30 News, Spring 2015
 - ¹⁹ Observations, 18.30 News, Spring 2015
 - ²⁰ Interview, manager, NN
 - ²¹ Interview, editor, MM
 - ²² Interview, editor, ES
 - ²³ Interview, editor, ES
 - ²⁴ Interview, editor MM and manager NN
 - ²⁵ Interview, anchor, KB