

“The Technology is Just the MacGuffin”: Observing Innovative Learning Culture in the Development of Automated and AI-Generated Reporting at German Public Service Medium WDR

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ABSTRACT

We analyze the complex innovation process that led to the development of automatically written soccer match reports for the Sportschau, a sports magazine produced by German Public Service Medium (PSM) Westdeutscher Rundfunk (WDR). From the perspective of innovative learning culture (ILC), we ask via guideline-based interviews which of its characteristics and conditions could be observed. Findings show that almost all the characteristics of ILC were present, such as the team being allowed by WDR to be experimental and creative in its approach, as were ILC's conditions, such as open communication and shared goals, which were mainly managed by WDR's Innovation Hub.

Introduction

Recent developments in automation and AI technology are ushering in a new era of innovation in journalism. This study explores the communicative conditions that enable journalism to innovate. We focus on automated content generation, which is defined as “algorithmic processes that convert data into narrative news texts with limited to no human intervention beyond the initial programming” (Carlson, 2015, p. 417), and content creation by artificial intelligence (AI). To this end, we describe the complex innovation process that led to the development of a prototype for automatically written soccer match reports at the sports magazine Sportschau, namely its online presence, which is a part of German public service broadcasting. To do so, we focus on the communicative conditions, namely in which way characteristics and conditions of innovative learning culture (ILC; Porcu, 2020) could be observed in the studied innovation process.

We explore an innovation process within the German regional broadcaster Westdeutscher Rundfunk (WDR), and thus a Public Service Media

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(PSM) environment. PSM are facing specific economic and political conditions which have to be kept in mind when discussing the communicative conditions for innovation. For German PSM, the RÄStV (German: Rundfunkänderungsstaatsvertrag, the nationwide broadcasting agreement) regulates the innovation activities, struggling to keep the two large broadcasters ARD and ZDF in line with their societal mission while keeping them competitive in the media market at the same time (Herzog & Meese, 2021). Even though PSM are not supposed to compete with commercial media and rather make programming that reflects society as a whole, the behavior of other, commercial media affects PSM, as they also adhere to certain trends (e.g., by focusing more on programming for a young audience or, as in our case, on implementing automation) (Jones et al., 2022). German PSM work in a federal structure, with two national organizations, the ZDF and the ARD, the latter being the joint organization of Germany's regional public service broadcasters. As an umbrella organization which houses nine regional broadcasters and the international broadcaster Deutsche Welle, ARD, for example, provides joint national TV programs, and the joint streaming platform for all regional broadcasters, the "Mediathek." WDR, the broadcaster behind Sportschau, is one of the regional broadcasters that produce radio and television programs. Founded in 1956, WDR is the largest regional broadcaster in the ARD (WDR, 2025). It is headquartered in Cologne and serves North Rhine-Westphalia. While WDR is thus organized within a larger national context, it operates independently in its day-to-day workings. Moreover, it runs its own innovation team (see below), as do many of the other German PSM. The PSM's work in TV and radio is contrasted by offerings of the private media (Schäfer, 2016, p. 281). German PSM are funded by an obligatory household levy, which is why there is pressure to demonstrate the legitimacy of all actions to the fee payers (Herzog & Meese, 2021; Sehl & Cornia, 2021), including innovation activities, which sets them apart from private media.

We use observations and in-depth interviews with all team members involved throughout the whole innovation process to examine how communicative factors affected the goal of developing a prototype for automatically written soccer articles for Sportschau. Thus, our study can be found in the context of automation and AI use and the challenges that journalism faces in light of these developments. In Germany, the technology is and was already used, for example, for generating soccer articles and for COVID-19 coverage (Körner, 2024, pp. 33–35; Kunert, 2020). Of course, the use of automation and AI in journalism goes beyond that, especially in the production phase of journalism (e.g., Guenther et al., 2025, who show that it is often used for behind the scenes work, such as translation, gaining inspiration for headlines or interview questions, or editing, i.e. for enhancing efficiency), but this study focuses on the implementation of article generation.

In our study, we focus on how automation and AI are adopted in newsrooms, and which communicative conditions are – and should – be present when doing so in a way that involves all team members. We especially highlight the role of effective management, i.e. a team leader, in the innovation development process. To operationalize these communicative conditions, we analyze which characteristics and conditions of ILC were present in the innovation process, thus focusing on communication culture and learning.

We thus explore the innovation's development within WDR, from the initial idea to its elaboration as a prototype (Dogruel, 2013, 2015, p. 157). The innovation process was conducted digitally, as it fell into the time of the COVID-19 pandemic, which also meant using innovative approaches when communicating within the team, from using video conferencing to digital brainstorming tools.

Our study contributes to the practical understanding of innovation processes in PSM (Sehl & Cornia, 2021), and sheds light on the communicative conditions for successful innovation processes, especially concerning the implementation and management of an innovative learning culture (Koivula et al., 2022; Porcu, 2020) in the public service broadcasting system. Moreover, we highlight that management still has a key role in media innovation. In our case, this was a representative from WDR's innovation team who led the team from start to finish, who thus contributed significantly to the success of the innovation process, and who also strategically communicated the team's progress within the wider media organization. As for the contribution to the field of journalism studies, the findings show the role the organization's structure might play, in our case an innovation team which is separate from the day-to-day editorial work and brings journalists and technicians together, and how it thus takes on a special role in which it may adhere to what we observe as the characteristics and conditions of ILC.

Literature review

Definition of “innovation”

The term “innovation” is not clearly defined, with different aspects, levels and stages being emphasized (Crossan & Apaydin, 2010; Damanpour & Aravind, 2012; García-Avilés, 2021). In its basic sense, Storsul and Krumsvik (2013, p. 14) define innovation as “introducing *something new* into the socioeconomic system” (emphasis in original). What that is, and the degree of novelty in relation to that system, needs to be further defined according to the case at hand (Bleyen et al., 2014, p. 31). We also apply this basic assessment to our study, as the prototype that is developed within the innovation process is not new technology in itself, but new to WDR and its processes.

Crossan and Apaydin (2010, p. 1155) add that innovation is multidimensional and “both a process and an outcome” (also Damanpour & Aravind, 2012, p. 425), which includes an organization’s innovative “capacity to react to changes” (García-Avilés et al., 2019). We thus study the whole innovation process, from initiation to prototype, which mirrors WDR’s capacity for changes on all levels. Dogruel’s (2013, pp. 37–38) holistic model of innovation in media considers the specificities of media and goes from the initial idea to the consequences of innovation. First, Dogruel also sees “newness” (p. 37) as an important characteristic of innovation, and also states that this term needs to be defined for the context at hand. Second, she states that “economic or societal exploitation” (p. 37) is a key point for media innovation, meaning the implementation of said innovation. Third, she emphasizes the “communicative implications” (p. 38) of innovation on all levels of the media outlet and its audiences. Finally, she argues it is crucial to understand innovation as a “complex social process,” (p. 38) from inception to implementation. Thus, the notion of value is present in the definition of innovation, in “its transformative value, which modifies and improves the organization’s performance” (García-Avilés, 2021, p. 3). The notion of value is especially important for PSM, as they have to follow their public service remit, also in challenging times such as the ongoing digitalization and the changes that come with that (López-Golán et al., 2024). Innovation is found to be one dimension of PSM’s twelve core components of public value (Cañedo et al., 2022), as it is “pivotal for corporate development in the current multiplatform context” (p. 592) which PSM navigate, and where AI may play a role (p. 597). All in all, it requires a thorough reflection – and negotiation – on what innovation is supposed to achieve (Dogruel, 2015, p. 159). What must be avoided is that innovation feels like “a public relations activity to promote the media outlet” (interviewee of García-Avilés et al., 2019, p. 6) or a short-lived chase of “bright, shiny things” (Posetti, 2018) rather than a sustainable endeavor. Moreover, an innovation process can be categorized as either “closed innovation,” whereby the process takes place entirely in-house, or “open innovation,” where external parties are invited to contribute to the process, thereby increasing the volume of ideas generated (Chesbrough, 2004).

Communicative factors influencing media innovation processes

We study process innovation which explores “how the innovation is originated, developed, commercialized, diffused, adopted, or implemented” (Damanpour & Aravind, 2012; p. 425; also Storsul & Krumsvik, 2013, pp. 16–17), focusing on the origin and development in this study. Research shows that innovation processes in the media are also influenced by a variety of factors beyond technology (Koivula et al., 2022, p. 1020), communication being one of them.

We thus focus, first, on the communicative conditions within the PSM organization, as they form the basis of any innovation process. They encompass preconditions for the process, i.e. the day-to-day structural working conditions in which innovation happens. Second, we look at the communication climate for innovation within the organization, i.e. as presented by ILC.

First, one main day-to-day structural working condition is the organization's structure. Here, we highlight the role of innovation labs, as the innovation process we studied was led by WDR's innovation team, the WDR Innovation Hub. Boyles (2016, p. 238) describes these innovation labs as startup-like entities, which she finds to be "a safe harbor structure for tech-inclined journalists to experiment without harming the financial positioning of the larger organization." Nunes and Mills (2021, p. 654) emphasize "an interdisciplinary organizational environment – spanning editorial, technical, design and sometimes academic and business expertise – that stands apart (but sometimes alongside) the time-pressured environment of media and news production." Not only journalists are part of these entities or "labs," but also technical consultants or software agencies, complementing the journalism team with crucial expertise but without assuming journalistic authority themselves (Cools et al., 2024b, 2024a; Hogh-Janovsky & Meier, 2021). European PSM have successfully institutionalized innovation teams since around 2010 (Zaragoza Fuster & García Avilés, 2024) as "a response to changes in technology, communication and economy, reacting to the increased external and internal complexity and uncertainty promoted by digital disruption" (Nunes & Mills, 2021, p. 657). These innovation labs are now also part of long-term strategic considerations, for example regarding their aims and budgetary place in the organization (Hogh-Janovsky & Meier, 2021). It has been proven to be a struggle to connect the innovations to the daily routines of the newsroom, as the entities often work separately from the newsroom and are essentially "isolated from the products and processes of the larger news organization" (Boyles, 2016, pp. 238, 241; Cools et al., 2024a). Moreover, there may be a lack of a "common language" between journalists and the more technically inclined members of the team (Cools et al., 2024b, 2024a; Meier et al., 2017, pp. 39–41; Møller, 2023). All in all, innovation lab members see themselves as now institutionalized "innovation engine[s] for the transformation of their media organization" (Cools et al., 2024b; Hogh-Janovsky & Meier, 2021, p. 373; Nunes & Mills, 2021, p. 662). However, the weight of innovation often falls on the shoulders of individuals (García-Avilés et al., 2019, p. 6).

Second, regarding the flow of the innovation process, it is important to study the communication climate the innovation labs are anchored in, meaning the learning culture for innovation within the organization (Koivula et al., 2023; Porcu, 2020). Koivula et al. (2022, p. 1032) suggest that media outlets break down their hierarchical work structures and try to consciously introduce a learning culture that promotes innovation, with characteristics such as

fostering a climate in which employees learn from each other and have the autonomy to experiment and develop creative ideas (also Høgh-Janovsky & Meier, 2021, p. 373) – such as done in innovation labs. At PSM, a culture like this is already found at the BBC (United Kingdom) and RTVE (Spain) (Zaragoza Fuster & García Avilés, 2024), but for example lacking at Bayerischer Rundfunk (Germany (Meier et al., 2017). The climate for innovation shows whether there is freedom within the organization to tackle and negotiate novel ideas (Dogruel, 2015) and is a mirror of the organization’s culture and inner beliefs (Storsul & Krumsvik, 2013, pp. 18–21).

Innovative learning culture

To conceptualize the characteristics of a communication climate conducive to innovation, we make use of the theoretical framework of the innovative learning culture (ILC) (Porcu, 2020; Porcu et al., 2020). Porcu (2020, p. 1558) defines ILC as “a learning culture that drives and fosters innovation in the newsroom. It seeks to address the overarching questions of what the cultural parameters for learning and innovation in the newsroom are how professional journalists learn and innovate in it.” Porcu et al. (2020, p. 1422) even see “ILC as a prerequisite for new ideas to emerge, to be shared and developed in the newsroom.” ILC has seven characteristics and conditions (see Table 1), which summarize how management and newsroom workers may be working together in journalism when aiming to innovate. Having the freedom to be creative and try new things, as well as is learning from each other, are essential overarching characteristics. The conditions conducive to such characteristics revolve around trust and support, and newsroom workers sharing goals. It is noteworthy that ILC takes both the views of management and the

Table 1. Characteristics of and conditions for ILC.

Characteristics	
Learning from each other	learning from others in the workplace community
(Re)search/investigation	investigation aimed at improving (one’s) work
Experimental	trying out new possibilities with insecure outcomes
Autonomous	agency to make decisions about (one’s own) work
Creative	inspiring the development of new ideas
Radical	stimulating all that is very different from the usual
Flexible	capacity of people to easily adjust, switch or change
Conditions	
Leadership	management focussing on enabling people to change
Communication	open dialogue between members in the organization
Mutual trust	people trusting each other in the organization
Supporting culture	climate wherein receiving support is self-evident
Shared goals	workers and management pursuing the same targets
Appreciation	explicit appreciation of individual success
Training & development	systematic attention for the development of people

Notes: cited from Porcu (2020, p. 1564).

newsroom workers into account, as it reveals “the dynamics between them” (Porcu et al., 2020, p. 1423).

We apply both the characteristics and the conditions of ILC to our case. The characteristics are mostly linked to the preconditions and structures set by the overarching PSM organization. The conditions are then applied to the work within the specific innovation team. Even though the team we look at in this study is an ad-hoc team for a single project, we can see how elements of a learning culture within the whole PSM affect the team, as well as how the team works together.

ILC has been subject to criticism. As Koivula et al. (2022, p. 1032), found, the ILC framework does not include macro-level considerations. However, these considerations could have considerable impact on how innovation processes play out, and thus on the characteristics and conditions of ILC. Moreover, as Koivula et al. (2022, p. 1032) say, the role of technology is under-emphasized.

In light of the literature presented, we therefore use the case study of WDR Sportschau to pose the following questions:

Overarching RQ:

How did communicative conditions influence the innovation process of developing automatically written articles for WDR Sportschau?

RQ1: Which characteristics of ILC could be observed in the process and in what instances?

RQ2: Which conditions of ILC could be observed in the process and in what instances?

Methods

The process at WDR: Goals and project team

This innovation process was initiated by WDR’s Innovation Hub, which was founded in 2020 and is tasked with identifying areas of innovation for the broadcaster (WDR Innovation Hub, 2025), which is in line with the tasks of innovation teams of German PSM (see above). There is no separate technical team within the Innovation Hub (see Cools et al., 2024a); this expertise is sought externally. Previous projects examined the impact of synthetic media, in which they already considered the possible impact of AI on WDR (2021), and the media habits of generation alpha. In 2025, 12 people were part of the innovation hub (WDR, 2025).

The initial goal of the process studied here was to explore automated text generation that goes beyond the rule- and template-based technology that has

been used in the industry for several years, but which incorporates AI elements. Soccer match reports from the German men's Bundesliga were selected as a use case for the online presence of the leading sports magazine Sportschau. The TV magazine of Sportschau is televised by ARD's (the joint organization of Germany's public service broadcasters) national program, and is produced by one of its regional stations, WDR. Running since 1961, it reports on football and other sports, and has since expanded into the online sphere (Fernsehlexikon, [n.d.](#)) Sportschau has a broad audience, with its weekly TV editions reaching 3,6 to 3,9 million people (Welt, [2023](#)), making it an "anchor [in Saturday evening programming], [which means] it will remain an important part of the ARD program" (ARD sports coordinator Axel Balkausky, cited in Welt, [2023](#)). Soccer coverage is well suited for machine text generation because of the extensive structured data is available and the recurring events inherent in the matchday structure (Kunert, [2020](#)). To date, automation has been mainly used for lower leagues that would otherwise be impossible to cover due to a lack of resources (Kunert, [2020](#)).

The project team included the following stakeholders: employees of the WDR Innovation Hub (project management, internal and external communication), Sportschau employees (editorial staff, strategic development of digital media, and data journalism) as well as an in-house developer (technical consulting) and an external software agency. The process roughly followed these two phases: early development, where new innovative designs are negotiated, and the selection of a design that is then developed into a prototype (and, in the Sportschau case, a completed experiment within WDR) – all done by a close-knit group of actors (Dogruel, [2015](#), p. 159).

The automation model

The language generation model which was introduced by the external software agency is largely rule-based, i.e., a sentence is selected from a pool of manually pre-formulated match report sentences for an event X when this event is detected in the data. Then, a generative AI language model creates new versions of these manually created template sentences, thus reformulating these sentences, which is called "paraphrasing," bringing template-based and AI approaches together in a way which ensures journalistic quality. In the next step, these sentences are strung together so that the resulting text sounds as lively as possible. A reinforcement approach (called the "virtual editor") optimizes the composition of sentences for linguistic diversity, so that the resulting text does not sound robotic and monotonous. The text to be generated follows a so-called narrative plan, which specifies how it is structured, for example, that there are X sentences about the starting position of the teams. The data for the matches is provided by the fee-based DFL-API, i.e. the data interface of the German Soccer League. Moreover, the match articles could be

generated according to the fan perspective, which was an innovative approach, meaning that three articles were to be generated: a neutral one, and one each for the fans for the respective teams, favoring their experience over a neutral style.

Procedure and sampling

We followed the whole innovation process as observers, conducting an online news ethnography and guideline-based interviews, in which we consider that we have a team (made up of internal WDR employees and an external software agency) that worked solely online on their project, and to the largest degree in joint team meetings (Robinson & Metzler, 2016). We observed all team meetings (24 in total, ranging from 30-minute weekly meetings to 1,5-hour kickoff and interface design meetings) from the beginning of the process in February 2021 until its end in June 2022 and took detailed notes (for a similar approach, see Cools et al., 2024a). It is crucial to note that the innovation process proceeded during the COVID-19 pandemic, which is why all team meetings were held digitally. There were no other newsrooms interactions within the team, as all other communication was also conducted digitally, mostly via e-mail. The presence of the researchers and their role was made clear for all team members at the beginning of the process.

We focused on the interactions between team members, looking for actions and context that embody the characteristics of ILC. What we learned from the meetings informed the interview questionnaire, as we, for example, asked the interviewees from the software agency to clarify thinking processes on the technological development of the prototype and the subsequent communication to the team and the interviewee from the Innovation Hub to expand on the communication efforts to present the prototype within WDR proceeded.

We also interviewed the team members in guided interviews of about one hour each, and three of the team members twice, i.e., at the beginning and at the end of the process (a total of nine interviews with six team members). We interviewed: the project leader from the WDR Innovation Hub (Steve), a WDR technician (Tony), a WDR Sportschau journalist (Clint), a WDR Sportschau developer and sports data journalist (Nathaniel), an employee from the external software agency who took the lead (Bruce), and an employee from the external software agency who monitored the process from their perspective (Nick). The interviewees were informed in advance about the ethics of the study and their right to stop the interview at any time. We pseudonymized all the names in the manuscript.

Interview questions

All interviewees were asked a similar set of questions in the first round of interviewing, with additional questions depending on their role, e.g., more

technical details (see Appendix for interview guidelines). We addressed the day-to-day communicative conditions by asking, for example, about expectations and goals of the project and the Innovation Hub's role and what role the WDR's innovation culture and strategy might play in this. We also asked about the role of the Innovation Hub as the leader of the process, and what could be done differently in the remainder of the process, especially concerning communication. We were also interested in the team members' specific roles within the team, for example, as the software agency, and how they bring the process forward. For gaining insight on the communication climate, we, for instance, wanted to know how well they felt the team worked together, and which problems or challenges they saw. For background, we also inquired about the influence of the economic and political conditions, focusing, for example, on the interviewees' perception of the PSM mission in conjunction with the innovation process. The second set of interviews took these answers as a basis and asked for lessons learned from the process, and for expectations about how the innovation will be discussed and used within WDR (see Appendix for interview guideline).

Coding

The interviews were fully transcribed and coded by the researchers, and the handwritten field notes from the all-digital team meetings were scanned and then put into the analysis software. We followed Schreier (2012) in a systematic approach to analyzing the material, which means classifying the interview data by building our main deductive categories from the previous research literature on the topic of ILC and our research questions. As a second step, this approach allows for adding inductive sub-codes during the coding process. We coded for the communicative conditions which formed our main overarching deductive categories, namely the characteristics of ILC, the conditions of ILC, and, as context, the day-to-day working conditions within the PSM organization, with a focus on the role of WDR's innovation lab. The latter were used as background information for assessing the conditions of ILC, and the findings on these two main overarching deductive categories are merged in the results section. One of the researchers did the initial coding, with a second researcher checking the individual codes and discussing them with the first researcher. The first researcher then went through the codes again, so that we had three iterations of coding until we arrived at our results.

Results

The characteristics of ILC

We found that all characteristics of ILC were present in the innovation process studied. Moreover, the involvement of the Innovation Hub was the most

important overarching communicative condition that shaped the innovation process, as it was the main locus of the characteristics of the ILC.

The innovation process and the structure of the Innovation Hub were embedded in WDR's broader innovation strategy, which was a key element in structuring the innovation process. In line with the characteristics of the ILC of encouraging "*investigation* aimed at improving . . . work" (Porcu, 2020, p. 1564) and *radical* thinking [the characteristics of the ILC are italicized in the following text], WDR set the team the goal of going beyond already tried rule-based automation technology in their innovation process, and taking the first steps in working with AI technology at WDR, with the overall aim of making a mark in the field of automation in journalism though (*re*)search and *investigation*. The actual product at the end of the innovation process didn't play a major role, and WDR gave the team the freedom to be *experimental*, accepting that the results might be uncertain, and to be *creative* in their approach, with the only condition that the product should somehow involve AI. This approach was made possible by the Innovation Hub's structure, which allows for experimentation in new and innovative fields. As Tony (technician) said, the project

wasn't primarily about the quality of a product, but they wanted to show: Okay, we can do something with AI, with AI methods. [. . .] and it might even be irrelevant how much AI is actually in there. We had to start somewhere.

The importance of the issue may have helped pave the way for an easier process, claimed Steve, the representative of the Innovation Hub, who had expected more stumbling blocks due to internal political discussions (as he charmingly put it: there was only little "hauspolitisches Stolpersteingedöns," which we're afraid cannot be translated from German in a way that would do it justice). In the end, AI only played a minor role due to uncertainties with the technology (see below), but some elements were incorporated into the final algorithm.

Thus, the innovation process was pursued without formulating clear product-oriented goals, but rather as an "exploration of possibilities" (Clint, Sportschau journalist). According to Steve (Innovation Hub), getting to this open, experimental mindset within WDR was quite the process and thus the experimentation-friendly environment was rather new for them: "This would never have happened at WDR a year or two ago. [. . .] [WDR] might have said [earlier], with its own inertial forces . . . 'why should we program software, that's not who we are, we produce content'." Encouraging being *creative* and *radical* was, again, thus rather new, and was a crucial precondition for the innovation process at hand. This view is supported by Clint (Sportschau journalist), who claimed from an editorial point of view that "we [WDR] didn't have the courage for a long time. [. . .] We were used to finishing products, waiting until they are perfect." In this new innovation-friendly

environment, the Innovation Hub had many freedoms because “trust is placed in us. The WDR is serious about us” (Steve, Innovation Hub). The *creative* and *radical* approach was also evident in the makeup of the team, in which “all kinds of people come together [...] [resulting in] good new ideas for this project that I wouldn’t have thought of myself” (Tony, technician). Thus, WDR seemed to be actively working on changing its old ways, so that many characteristics of the ILC, as shown above, are actively encouraged, with the locus and driver being the Innovation Hub.

Initial thoughts on these *creative* ideas were collected in an early meeting on a shared Mural board to which everyone contributed. The views of all team members were included, whereas those of the Sportschau played a major role as they were the recipients of the prototype. Steve (Innovation Hub) structured the Mural as follows to provide an overview of what the process might look like: elements and scope of the project, possible obstacles and open questions, course of the project and next steps, agreements (between team members), and a “parking space” for issues that cannot be addressed under the previous points. Moreover, it was clarified what each team member means by the term “product.” These first steps led into an “MVP workshop” a few weeks later, in which the project and the “minimum viable product” (MVP) was clarified (which meant agreeing on textual articles for soccer match reports) and then further thought out in terms of necessary personnel and resources.

As Steve (Innovation Hub) said, the Innovation Hub may use the projects like the one presented here as “MacGuffins,” which are objects in movies that are not important in themselves, but whose importance lies in the fact that the characters rally around them, thereby driving the plot forward. Steve explained: “For the Innovation Hub, it’s not about building the innovation, it’s about getting WDR to innovate.” This perspective of not planning for a product that must be used but rather a project for generating further ideas speaks to the open innovation environment at WDR and a lived ILC, and that it is intended by the management to encourage cultural change of its organization through innovation. Hence, the projects of the Innovation Hub are the start for innovative ideas, and the essentials of those are then brought to WDR as a whole.

However, the freedom described above had its limits. The innovation process was dependent on finances, which prevented the team from being *flexible* in their approach and in being *autonomous* when trying to make decisions about how to proceed. Thus, many ideas which were formulated in the Mural from the very early meeting had to be scaled down, such as the extent of the involvement of AI, which was due to concerns regarding journalistic quality of the output on both the side of the journalists and the technicians, including the external software agency. So while the thinking on content could in principle go in any direction as long as it involved AI in some way, there were some constraints, mainly on how that thinking

would be implemented. After all, the Innovation Hub, despite having some financial freedom, was still part of the budget considerations of the larger PSM organization, which led to some uncertainties within the process. In meetings in March 2021 and July 2021, Steve (Innovation Hub) said that although the work of the Innovation Hub, then a year and a half old, was ongoing, its funding was only secured until February 2022, and any continuation was subject to an internal review by WDR's management. This situation was resolved in the Innovation Hub's favor, but it shows that innovation strategies may not be long-term in all aspects, and a budget cut would have also brought the studied innovation process to a stop. Here, one can see that the actual lived environment in which innovation is supposed to prosper may be open to many creative freedoms, but is constrained when it comes to resources. This is not only due to PSM having to be very strict with their budget choices due their funding model but also due to overarching management decisions in-house: During the run of the innovation process, the PSM set up a central AI office, which meant expanding on resources on AI an overarching level and reallocating budgets internally. However, as Steve (Innovation Hub) explained, the focus of the central AI office was not specifically on the development of automatically generated articles, but on how journalistic work is changing through automation and what this might mean for a media outlet like the studied PSM. This AI office did only play a role in discussions at a meta-level, such as questions within the team about what the purpose of this office was and what its impact might be on the innovation process. The ILC characteristic of *learning from each other* could have played a role in bringing the Innovation Hub and the central AI office together, but the two entities remained separate during the process.

The characteristic of *learning from each other* found entrance in another way, after the prototype for the automatically created articles was ready for presentation within the PSM. In order to present the work of the team within WDR, Steve (Innovation Hub) developed a "story" to present the prototype. With the help of the software agency, Tony (technician) and two Sportschau editors, he spent one dedicated meeting to meticulously work on the main message of the developed prototype, an easy-to-understand explanation of the prototype's functions and on anticipating questions that might come up, always focusing on "how does this help in editorial use?" (Steve, Innovation Hub) – and thus, how the whole of WDR may learn from this specific prototype. To achieve this, Steve (Innovation Hub) delivered a presentation that he had prepared in advance of the meeting, taking the team's input on board as he went through it slide by slide. A crucial part of this process was devising a strategy to sell the prototype as a tangible experience, not only for the Sportschau editors but also for the WDR management. During this

meeting, the team also rehearsed parts of the presentation insofar that the team collected questions that might come up later on, thus the team was again brought onto the same page concerning how their work would be presented later.

Showing that automation can address existing challenges at WDR not only had the aim of sharing knowledge but also a “tactical and strategic reason” (Steve, Innovation Hub) to lead to further discussions around automation and also AI. Steve (Innovation Hub) thus took care of the overall strategy of presenting the prototype in-house, thus influencing the organization’s culture and inner beliefs. The prototype then became a political issue internally, as it triggered more conversations about the role of using and developing automation and AI at WDR.

Beyond working on the main message, there were other meetings concerning the design and presentation of a click dummy (i.e. the prototype), as well as several short rounds to work on details. In these meetings, often only parts of the team were involved due to time constraints, but at the following meetings, Steve (Innovation Hub), with the help of the other team members, always brought them up to speed.

The conditions of ILC

All but one of the conditions of ILC could be observed within the work of the team. Steve (Innovation Hub) was primarily responsible for managing these conditions during the studied innovation process, providing *leadership* to the team and guiding the team members and their development of strengths through the process. It is noteworthy that he was not part of the PSM management, where ILC would normally locate the leadership role, but rather had a dual role due to his specific position as member of the Innovation Hub: he wore the hats of both manager of the process and journalist. The first meeting of the team involved spelling out these hats and also the roles of the team members, which played a big part in clarifying everyone’s interests in the project. The Sportschau journalists, for example, said they were interested in putting automatically created match reports in the Sportschau app which would allow users to personalize their experience. Other discussions revolved around constraints such as finances and personnel. This issue was mainly raised by Tony (technician), who repeatedly claimed that he would not be able to handle the programming alone. Interestingly, Steve’s (Innovation Hub) position as leader had not yet been determined at the time of this first meeting. He even offered the position to others, but by the end of the meeting, he had effectively become the leader with everyone’s implicit consent. This was because he had taken on organizational tasks such as clarifying finances and collecting

everyone's views on the project, as seen in the subsequent Mural board meeting (see above).

Steve (Innovation Hub) guided the team through all the steps and made sure that each member of the interdisciplinary team was highly involved in the outcome (such as through asking for their input not only in the MVP or design meeting but in every weekly meeting), which was one way of making sure that the team followed *shared goals*. He also made team members like Tony (technician) who had the original idea and previously struggled to convince people at WDR of the value of developing software, felt heard and valued. He for instance honored him as the one who came up with the original idea for the project, thus showing the ILC condition of *appreciation* of team members' contributions. Moreover, Steve (Innovation Hub) moderated the little time that the Sportschau team members could spare for the project on top of their daily duties, keeping them in the loop despite their time constraints, either through bilateral e-mails or by prioritizing their contributions when they couldn't stay for the whole meeting. All in all, he kept the individual pieces – and the team members' differing needs – together. As one part of that, he also managed the digital environment that the COVID-19 pandemic asked for, as he was in charge of keeping the process going via setting up video conferencing, sending bilateral e-mails, and keeping track of ideas and developments in digital notetaking software such as Mural. While such tasks are not part of the ILC model, they demonstrate on a meta level how Steve (Innovation Hub) showed reliability to the team as a leader, which reinforces all conditions of ILC.

All in all, Steve's (Innovation Hub) approach was to “steer in an open-ended way” (Tony, technician) (and thus satisfying the condition of *communication*). The condition of *communication* also played a crucial role in another way: Steve (Innovation Hub) said that he had the much needed “ability to translate” between the “multiple perspectives” (Tony, technician). We could observe this during the meetings: He moderated discussions between journalists and technicians and often summarized technical terms in more accessible language, especially when the technological specificities of the prototypes were explained by the software agency.

Steve (Innovation Hub) also had to moderate uncertainties. For example, Clint (Sportschau journalist) felt that the software agency lacked knowledge of soccer (and which Bruce from the software agency freely admitted in a meeting in which possible match data was reviewed). Clint (Sportschau journalist) felt this hindered the process, but the issue was addressed by involving more Sportschau expertise. Moreover, especially at the beginning of the process, it could be observed in the meetings that the distribution of responsibilities was unclear to almost all team members, which had to be addressed, calling for *leadership* and a continuous reiteration of *shared goals*.

Steve (Innovation Hub) took it upon himself to address these uncertainties point by point, and he quickly became the de facto leader.

Some of these uncertainties were due to the digital nature of the process, such as navigating several platforms for getting information on the status of the process. Coordination between team members for individual tasks also proved to be subject to uncertainties, but this was resolved when responsibilities were made clear. For example, the technical side of the team coordinated successfully: Nathaniel (Sportschau developer and sports data journalist) worked with a developer from the software agency, and they discussed the sophistication of the automation model in depth in their role as technical experts and then came to a compromise which was accepted by the rest of the team. As an overarching statement of the teamwork between the external software agency and internal team members of WDR, Bruce (external software agency lead) said, he “found it great that I was always listened to carefully in terms of where we are now [...] that I was trusted to go in the right direction.” Here, two conditions of ILC were at play: *appreciation* and *mutual trust*. However, despite the trust between the team members and even though the software agency had worked successfully with the Innovation Hub and other German PSM before, arriving at this stage and trusting the software agency with the “black box [the algorithm] was hard” (Steve, Innovation Hub) for the WDR team members, especially since the algorithm took some time to develop and thus patience was needed.

As the development of the algorithm took its time, disappointments entered the process when the technology was negotiated. The final decision on the algorithm was a defining moment for the communication within the team, as after an exploration phase, the software agency rejected sophisticated AI approaches as impractical. The whole decision process concerning the technology took half a year, but already in the third team meeting, a workshop in which the MVP was negotiated, the team, after long discussions, decided to stay with text only instead of more innovative video automation. In the end, the implemented algorithm was largely based on established, rule-based technologies, which eventually meant discarding the plan to use AI which the group had carefully hatched in its first meetings. This turn of events “almost led to despair” (Steve, Innovation Hub). The decision was made after to a lengthy discussion on the expected rather low journalistic quality of the AI-generated texts. But, when the decision had been made to use an established rule-based technology with a few AI features, and the prototype was becoming concrete, the process continued successfully. This compromise was thus a disillusionment for the team – in the end, however, the software agency was able to present an idea for a language generator that was considered sufficiently innovative. This process can be seen as a focal point for many of the conditions of ILC: It was the role of Steve (Innovation Hub) to demonstrate *leadership* during the process, and steer the team through these

discussions with open *communication*, for example concerning which parts would be AI and which would be rule-based. What helped the team to stay together and not despair over this technology issue is that the *shared goals* were reiterated, and all team members were embedded in the *supporting culture* in which *appreciation* of all ideas played a major role – even more than the product itself.

Role of the product

The nature of the product – i.e. journalistic articles – played a major role in the process and was thus an important backdrop for how the ILC conditions could play out. For WDR and as for any other outlet producing journalism, ensuring journalistic quality of the automatically created articles at all times was crucial, all while reconciling it with expectations of technological innovation. The ILC conditions of open and honest *communication* and reiterating *shared goals* were crucial when considering the demands of journalistic products. The risk of hallucinations due to an AI model was considered uncontrollable for the articles to be generated, and “the high density of facts in journalism does not fit with AI” (Steve, Innovation Hub). The precedence of journalistic quality was already made clear by the team during the first meeting with the software agency, in which several approaches were discussed, and already rejected at a very early stage. Crucially, not only the journalists but also Tony (technician) and the software agency had a strong inclination to adhere to journalistic standards of quality, not just technological progress – showing that the team, despite its makeup of PSM and external team members, could agree on *shared goals* and work with them. Journalistic quality was also a concern when choosing the data for the algorithm: The decision which data sets to buy also took two meetings, in which it was carefully negotiated which kind of data points were needed to achieve the desired article quality, which data was already available at WDR, and how the data fit with the algorithm the software agency was going to build. The importance of purchasing high-quality as well as fitting data for the project was made clear in the first meeting. This gave the process security and peace of mind to the team members. This discussion was closely tied to the creation of the elements of a “narration plan,” i.e. the components of a generated article. This again demonstrated the close relationship between data and journalistic quality in the process.

Beyond journalistic quality, the team, and especially Steve (Innovation Hub) had to navigate the special identity of the outlet which was supposed to make use of the innovation, that is Sportschau. It had to be ensured that the automatically generated texts “sound like Sportschau, and not so clichéd,” said Tony (technician), which he made sure by carefully analyzing match reports by Sportschau reporters and then comparing them to the automatically written reports, which he reported on during several meetings. Here, one can see the ILC condition of a *supporting culture* at work, in which the technician is

taking on work outside of his own division. However, within the process of getting the articles to sound like Sportschau, there were disagreements between the external software agency and WDR team members: While Nick (external software agency supervisor) believed they succeeded with their algorithm, as “four out of five articles could easily pass as an editorial contribution,” Nathaniel (Sportschau developer and sports data journalist) was initially not satisfied with the text quality, wanting to achieve an even better product. Again, it was Steve’s (Innovation Hub) role to take on leadership and navigate this situation with open *communication* and reminding the team members of their *shared goals*, one of them finishing a working prototype.

The ILC condition of *training and development* of team members did not play a role in the process. This may be since the team was put together ad hoc for this project. Moreover, all team members were doing the work in the innovation project on top of their daily duties, so that training and development was not a goal within this innovation process.

Discussion & conclusions

This study examined the characteristics and conditions of ILC (Porcu, 2020) in the context of an innovation process within a German PSM that aimed to create a prototype for automatically generated sports articles. Our overarching research question was therefore to study the communicative conditions of the innovation process at hand through the lens of ILC. We found that all the characteristics of ILC (RQ1) could be observed within the innovation process, which was dedicated to *(re)search and investigation*. The team was allowed by WDR, and thus the overall organization, to pursue its goal in an *experimental, creative, and radical* way – and acted like it, in contrast to the members of a development network in a Nordic PSM studied by Koivula et al. (2022). However, the team was constrained by budgetary concerns when it came to being *flexible* and *autonomous*, although these were resolved in the team’s favor. Here, the overarching context dictated how the characteristics of ILC could play out. *Learning from each other* could be observed when the prototype was ready for presentation within WDR, as the team leader from the Innovation Hub used the then tangible product to educate the wider WDR about the potential of automation and AI. Therefore, the prototype was designed to benefit the entire organization, with the aim of going beyond Sportschau.

The characteristics of the ILC could play out due to the presence of many of ILC’s conditions (RQ2). The role of the Innovation Hub was paramount here, as its representative, Steve, kept the process going under his *leadership*, and ensured open *communication*, especially between the different worlds of journalists and technicians, even in uncertain times. He involved each team member in the process, reiterating the team’s *shared goals* and showing

constant *appreciation* for the team members' efforts. These characteristics were also deemed crucial by Perreault and Tham (2024) for a team leader. Through this leadership, *mutual trust* and a following *supporting culture* quickly developed, which was particularly important in bringing together the internal WDR team members and the external software agency. The ILC condition of *training and development* of team members could not be observed. It should be noted is that these conditions were embedded in the importance of adhering to journalistic values, a sentiment which was shared by all team members, including the external software agency. As Koivula et al. (2022, pp. 1028–1029) found in the case of the development network they studied, we also found that journalistic practice shaped the process, although in our case it was about ensuring journalistic quality rather than developing products.

The central role of leadership and management: Moderating between two worlds

What our research shows is that centralized actors such as the Innovation Hub can, firstly, help steer team members from different backgrounds and, secondly, navigate the structures beyond the immediate team and the immediate innovation process. The Innovation Hub has thus proven to be the locus of the principles of ILC. We thus respond to Koivula et al. (2022, p. 1032) and their call to strengthen the ILC framework with a view of macro-level considerations.

The member of the Innovation Hub, Steve, took over the overall leadership, and since he came from an interdisciplinary entity, he was neither speaking exclusively with the voice of a journalist nor with a tech-inclined voice. He was thus able to moderate discussions between journalists and technicians, bringing their views together in a productive and also friendly environment, which aligns with previous research by Cools et al. (2024a). Contrary to Møller (2023), we therefore find that with effort, these two worlds can understand each other. The process was aided by the fact that the Innovation Hub member had both journalistic expertise and leadership skills, such as communication, delegation and trust. This may have helped him to be accepted by the team (Perreault & Tham, 2024). Having someone with these characteristics leading teams that operate in both worlds may improve the newsroom routine beyond dedicated innovation processes. This could also apply to daily work, such as in data journalism teams, which must also navigate between journalism and technology.

What is apparent here is that even through ILC argues that management and journalists should be considered equally when analyzing a process (Porcu et al., 2020, pp. 1422–1423), the reality is that these actors have unequal possibilities and capabilities to influence the

process. Management does have the most power, whether budgetary or communicative. But as one can see in our study, this imbalance may be addressed if management is willing to adhere to ILC principles and thus help make the innovation process run smoothly despite power imbalances. In fact, the member of the Innovation Hub used his managerial power to further the process in the interest of all team members, elevating their positions and voices when necessary, which can be considered best practice. We thus argue that management can take on a central leadership role and be an effective driver for innovation, but one that sees the team members as valuable partners with equal voice, even if their power with the media organization may not be the same.

This leadership role was crucial at tipping points during the process. As described in the results section, especially the decision to stick with a rule-based algorithm rather than a sophisticated AI approach led to disappointment. If Steve (Innovation Hub) had not demonstrated strong *leadership* by reiterating the *shared goals* and expressing ongoing *appreciation* for the team members and their efforts, one might have questioned whether the process would have broken down. What can be seen, without any speculation, is that the friendly and supporting environment was valued by all team members, bringing them together despite uncertainties and challenges.

The importance of involving all team members – and bringing in external expertise

It was necessary to involve both journalists and technicians in the process, as Steve (Innovation Hub) realized early on, also by listening to Tony (technician), who claimed that programming a prototype using AI would not have been feasible for WDR alone. The external software agency was brought into the process to solve two serious resource problems, namely a lack of technological skills, including the knowledge of information and communication technology innovations regarding AI beyond the media, and a lack of time to carry out the programming work. The involvement of the software agency freed up Tony (technician), who would otherwise have been solely responsible for the programming. These examples show the need for *leadership*, as managing the needs and views of the team members was not an easy task.

Thus, by adhering to what we identified as the characteristics and conditions of ILC, Steve (Innovation Hub) achieved a bridging of cultures, and thus there was no isolation of the intrapreneurial unit, as Boyles (2016, p. 241) had found in her research. Moreover, the team actively opened their process to an external software agency, thereby facilitating the generation of more ideas (Chesbrough, 2004). Hence, Steve as the representative of the Innovation Hub acted as a facilitator and brought

together the necessary interdisciplinary skills within WDR, as found for other innovation teams in Europe (Cools et al., 2024b, p. 8; Nunes & Mills, 2021).

The need to strategically communicate within the wider media organization

Moreover, Steve (Innovation Hub) navigated the structures beyond the immediate innovation process, with the aim of highlighting the wider implications of the prototype within the broader context of WDR. We find that he made use of a two-pronged strategy: first, he used what we call the MacGuffin strategy, meaning developing a low-threshold prototype that is not necessarily intended for immediate use, with the aim of sparking discussions within WDR about automation and AI use in general. To achieve this, secondly, he pursued the click dummy strategy, which involved setting up a tangible click dummy to present the results of the innovation process to the wider WDR. Through the click dummy, skeptics were embraced, included, valued, and ultimately became important multipliers, even though the prototype stayed at its experimental stage and was not rolled out wider.

The study shows that the organization's structure, namely the Innovation Hub, played a vital role in conducting the innovation process. In contrast to what the interviewees of Boyles (2016, p. 239) felt they experienced in their organizations, WDR valued the ideas of the Innovation Hub, saw its needs – and had made it part of its innovation strategy (see Storsul & Krumsvik, 2013, pp. 18–21). But there were also challenges: Negotiating the budget proved to be tricky at times, as the financing of the Innovation Hub was up for renewal during the innovation phase, but the run of the Innovation Hub was extended, again demonstrating the trust WDR had in it (Hogh-Janovsky & Meier, 2021).

Contributions of the study

We show in our study that the communicative conditions of innovation processes need to be highlighted when evaluating success. To do so, we observed the communicative conditions in the entire innovation process, from initiation to prototype. We therefore apply ILC more widely than originally intended and find that this approach effectively demonstrates how preconditions can become crucial ongoing conditions in a process when applied carefully over time. As we could see, all phases of the innovation process exhibited crucial communicative moments which defined the process at hand. We thus make a contribution to practical journalism, showing which characteristics and conditions should be met when starting and carrying out an innovation process. We show how communication may aid an innovation process, which could be a model for other PSM and also commercial media outlets. Although ILC was

not developed for PSM structures, it can be applied to them if the organization includes entities such as an innovation lab. However, it has to be kept in mind that PSM face specific challenges compared to their privately owned counterparts concerning innovation due to their public service mission (cCañedo et al., 2022; Sehl & Cornia, 2021), which means that there may be communicative preconditions at play that are not conducive to the conditions of ILC. Examples for this are hierarchical and risk-averse thinking in PSM (von Rimscha et al., 2024). Nevertheless, as this study shows, while communicative traditions might be at play that hinder innovation, they can be overcome by the right environment and treatment within the PSM, which, in this case, was the WDR Innovation Hub and the approach of its representative.

We also emphasize (through the example of the MacGuffin) that the impact of an innovation may extend beyond the development of a prototype with the aid of strategic communication, encompassing broader organizational and cultural evolution which may follow from an innovation process. As for our contribution to the field of journalism studies, we have extended the literature on the empirical application of ILC, pointing out that it is crucial to have a locus for the communicative efforts, someone in a management position who holds the strings in hand which define the innovation process and has the trust of the team members, and thus we underline the vital nature of the role of a “storyteller of innovation.” In our case, this member of management and storyteller is a representative of an innovation team, so that we also contribute to the literature on the duties and characteristics of innovation teams within PSM. Concerning PSM, it is also apparent that certain infrastructure is needed to carry out such an innovation process, namely an adequately funded innovation team. This may be challenging for smaller PSM. Also, different levels of digital maturity within PSM might also pose a problem, as in the case of this study, previous knowledge of automation and AI technology helped to shape the process.

Limitations

As we observed only one innovation process at the WDR, we cannot make generalizations about innovation within PSM in general. Moreover, the Innovation Hub had already dealt with the development of AI at the media organization before and did not start from scratch in that regard (WDR, 2021). PSM are special environments with specific, also communicative pressures (Sehl & Cornia, 2021), so that these results might not apply to innovation processes as they would be found in private media, for example due to a lack of dedicated teams or funding for innovation. We

also have to consider the role of the COVID-19 pandemic, as the studied innovation process was conducted digitally, i.e. all team meetings and bilateral communication. Nevertheless, future research could analyze other innovation processes in media outlets according to ILC, going beyond automation and AI, and study the impact of communicative conditions there. This research could compare different PSM with each other, even internationally, to account for different cultures and styles of communication within these organizations, which could help verify the applicability of the ILC framework in different national and organizational contexts.

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Appendix: Interview guidelines

Steve (Innovation Hub):

- (1) Please introduce yourself briefly, first in general and then in relation to the project, focusing particularly on your professional qualifications and position at WDR.
- (2) Describe the project and its goals from your point of view. (If not mentioned explicitly: How did the project come about? When did work on the project begin?)
- (3) How do you experience this process?
 - (a) As an innovator?
 - (b) As a moderator of the process?
 - (c) As an employee of PSM?
- (4) Is there another perspective that we have overlooked?
- (5) How did the technological idea for the solution to the problem develop over the course of the project, and what were the decisive influences?
- (6) What factors ultimately influenced the selection of the technical solution? How do you proceed with such a project and find solutions?
- (7) Which data is relevant to this project? Where is this data available (internal/external)? What data needs to be generated? What challenges are there in each case?
- (8) How do you think the project will progress over the next few months, and what are your personal goals?

Tony (technician):

- (1) Please introduce yourself briefly, first in general and then in relation to the project, focusing particularly on your professional qualifications and position at WDR.
- (2) Describe the project and its goals from your point of view. (If not mentioned explicitly: How did the project come about? When did work on the project begin?)
- (3) How do you experience this process?
 - (a) As an innovator?
 - (b) As a computer scientist/technician?
 - (c) As an employee of PSM?
- (4) Is there another perspective that we have overlooked?
- (5) How did the technological idea for the solution to the problem develop over the course of the project, and what were the decisive influences?
- (6) What factors ultimately influenced the selection of the technical solution? How do you proceed with such a project and find solutions?
- (7) Which data is relevant to this project? Where is this data available (internal/external)? What data needs to be generated? What challenges are there in each case?
- (8) How do you think the project will progress over the next few months, and what are your personal goals?

Clint (Sportschau journalist):

- (1) Describe the project and its goals from your point of view. (If not mentioned explicitly: How did the project come about? When did work on the project begin?)
- (2) How do you experience this process?
 - (a) As an innovator?
 - (b) As a sports journalist?
 - (c) As an employee of PSM?
- (3) Is there another perspective that we have overlooked?
- (4) How did the technological idea for the solution to the problem develop over the course of the project, and what were the decisive influences?

- (5) What factors ultimately influenced the selection of the technical solution? How do you proceed with such a project and find solutions?
- (6) In your opinion, to what extent is the current solution innovative?
- (7) Which data is relevant to this project? Where is this data available (internal/external)? What data needs to be generated? What challenges are there in each case?
- (8) How do you think the project will progress over the next few months, and what are your personal goals?

Nathaniel (Sportschau developer and data journalist):

- (1) Please introduce yourself briefly, first in general and then with regard to the project. In particular, please mention your professional qualifications and position at WDR
- (2) How did the template writing process work exactly?
- (3) How did you get involved in the project?
- (4) As a data journalist and developer, what do you do to combine data and soccer reporting?
- (5) What do you do at Sportschau?
- (6) What are your hopes for the future of the project, and how realistic are they?
- (7) How likely is it that the prototype will be used on Sportschau?
- (8) Please provide a detailed description of the work, including the number of hours spent.
- (9) How did you find collaborating with Appsfactory?
- (10) Do you think that a prototype like this will eventually take your job?
- (11) What is your impression of the prototype's outcome (i.e. the generated articles)?

Bruce (external software agency lead):

- (1) Please introduce yourself briefly, first in general and then in relation to the project, focusing particularly on your professional qualifications and position in the agency.
- (2) Describe the project and its goals from your point of view. (If not mentioned explicitly: How did the project come about? When did work on the project begin?)
- (3) How do you experience this process?
 - (a) As an innovator?
 - (b) As a computer scientist/technician?
 - (c) As an employee of an agency commissioned as an external service provider for this project?
- (4) Is there another perspective that we have overlooked?
- (5) How did the technological idea for the solution to the problem develop over the course of the project, and what were the decisive influences?
- (6) What factors ultimately influenced the selection of the technical solution? How do you proceed with such a project and find solutions?
- (7) In your opinion, to what extent is the current solution innovative?
- (8) Which data is relevant to this project? Where is this data available (internal/external)? What data needs to be generated? What challenges are there in each case?
- (9) Which of the project's expectations have been fulfilled so far, and which have had to be adapted?
- (10) How do you think the project will progress over the next few months, and what are your personal goals?

Nick (external software agency supervisor):

- (1) Please introduce yourself briefly, first in general and then in relation to the project, focusing particularly on your professional qualifications and position in the agency.
- (2) Describe the project and its goals from your point of view. (If not mentioned explicitly: How did the project come about? When did work on the project begin?)

- (3) How do you experience this process?
 - (a) As an innovator?
 - (b) As a computer scientist/technician?
 - (c) As an employee of agency commissioned as an external service provider for this project?
- (4) Is there another perspective that we have overlooked?
- (5) How did the technological idea for the solution to the problem develop over the course of the project, and what were the decisive influences?
- (6) What factors ultimately influenced the selection of the technical solution? How do you proceed with such a project and find solutions?
- (7) In your opinion, to what extent is the current solution innovative?
- (8) Which of the project's expectations have been fulfilled so far, and which have had to be adapted?
- (9) How do you think the project will progress over the next few months, and what are your personal goals?

Second round of interviews with Steve (Innovation Hub), Tony (technician), and Clint (Sportschau journalist):

- (1) Please assess the progress of the project to date.
- (2) What would you have done differently? What should have been done differently?
- (3) What lessons have been learned from the process, in your opinion?
- (4) What opinions about the process and the prototype have you heard from within WDR?
- (5) Please evaluate the collaboration with the external software agency.
- (6) Please tell us about the project's benefits for WDR and Sportschau in particular.
- (7) What are the chances of the prototype being implemented at Sportschau?
- (8) What are your hopes for the future of the prototype?