Report

The Governance of Artificial Intelligence in Public Service Media

A Comparative Analysis

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ABSTRACT

AI-driven tools, machine learning and Natural Language Processing NLP have become pervasive in newsrooms, influencing almost every aspect of journalism from information retrieval, to news production and distribution. However, while AI offers many opportunities, it also entails specific challenges particularly in the design of the relation between human judgment and automation. Questions of how such technologies can be interwoven with journalistic values and professional ethics in order to ensure accountable use of algorithms become thus paramount. When it comes to the implementation of AI-driven tools in public service media (PSM), it needs to be taken into account that PSM are part of a wider system of checks and balances in a democratic society. Therefore, challenges in terms of reliability, transparency, diversity, and fairness that come with the technology play a crucial role and need to be addressed carefully. Hence, this research aims to analyze the way in which the design, use, and implementation of AI-driven tools in news production are regulated through code of ethics or other forms of self- and (co-)regulation. The findings of the project shall also be used to formulate policy recommendations for the future design of AI technologies used in journalism.

Executive Summary

The study shows that the use of AI in news media and journalism has become pervasive, in particular across public service media. The tools are regarded as helpful to support news work, to the point that they influence almost all phases of the news cycle. However, like any other technological innovation, these tools not only support journalists in their work, but they change the nature, role and workflows of journalism and journalists. As a consequence, the question of how to regulate AI technology is crucial.

At the European level, different laws and initiatives such as the Digital Services Act or the AI Act are discussed, or have already come into force. At the national level, similarities between the strategies of the analyzed countries can be observed, in particular regarding the combination of regulatory updates and the creation of new ethical guidelines. All of the countries in the sample have adopted a national AI strategy, in which AI governance plays a more or less central role. The three EU members Germany, France, and Finland clearly state the necessity of a European-wide regulation. In this sense, many of the national enquiries into AI governance will also be channeled upwards to the supranational legislative debates. However, all EU countries converge on the fact that AI governance requires both amendments to current regulatory frameworks (for instance regarding fundamental rights, data protection rights, transparency, the control of these systems etc.) and specific ethical principles and guidelines for the design, use, and implementation of AI systems. However, both at the supranational as well as at the national level, news media and journalism rarely play a crucial role. If media are mentioned, in most cases the policy documents denote intermediaries such as social media platforms. At the national level, the proposed solutions often focus on the need for more self-regulation, in particular because the use cases as well as the challenges and risks of AI technology may differ between industries.

Switzerland, unlike all other countries, has analyzed the potential impact of AI technology in the news media sector. Overall, the challenges of AI in news and journalism do not seem to be of primary importance at the moment given that the general legal framework in Switzerland is seen as sufficiently elaborated to deal with novel AI challenges. Nevertheless, some institutions such as Federal Media Commission suggest consolidating self-regulation regarding AI. At the same time, Switzerland should continue to observe both international developments as well as the scientific debate revolving around the implications of AI in news and journalism.

The PSM in this study have all adopted self-regulatory means in relation to AI governance. Starting from the fundamental values of public service media enshrined in charters and licenses, most guidelines offer practical guidance about how these core values can be translated into the development and use of AI technology. These principles have been developed to facilitate the use and design of AI-driven tools, but also to foster a critical discussion about AI, and to build trust in the technology given that they are often seen as transformative technologies regarding the way news is produced, and how journalists will interact with audiences.

Table of contents

1. Introduction

1.1 Context and working definition of artificial intelligence

This report describes the governance of artificial intelligence in public service media, that is, the way in which the design, use, and implementation of AI-driven tools in news production are delimited either through code of ethics or other forms of regulation. This brief introductory section offers an overview of the current state of the art regarding the impact as well as the governance of AI in news media, it explains the methods used to gather the relevant data, it will offer a working definition of AI used throughout, and the structure of the report.

Artificial intelligence (AI) and automation have gained a lot of attention throughout the last years (Beckett, 2019; Porlezza, 2018). These tools are widely regarded as helpful tools to support news work (Bucher, 2018), but like any other technological innovation, they also come with specific challenges: not only do they support journalists in their everyday work, but they also change the nature, role and workflows of journalism (Pavlik 2000; Thurman, Dörr & Kunert 2017; Lewis, Guzman, & Schmidt 2019) and contribute to making "journalism in new ways, by creating new genres, practices, and understandings of what news and news work is, and what they ought to be" (Bucher 2018, p. 132).

Besides the complex ramifications related to the impact of AI in news work, another huge problem is linked to the term AI itself: it is a complex, multifaceted, often generically and superficially used term that denotes both a field of enquiry and a particular technology (Gunkel, 2020, p. 3). The complexity of its application also stems from the fact that it encompasses a huge variety of subfields (Russell & Norvig, 2009, p. 1) that range from healthcare, to building chess engines, to self-driving cars, robotics, and many more. These AI expert systems have seen an increasingly widespread use in society (Epstein et al., 2018), yet there is no universally accepted definition of AI. The fact that different disciplines diverge in their understanding of the technology makes it even more difficult finding a common ground on which to build a shared understanding of what AI means. On top of that, the often simplistic and dystopian depiction of AI in (science-) fiction - e.g. Hollywood movies such as Terminator, A.I., or She - contribute to the imaginary that machines can not only mimic human behavior but are actually capable of human reasoning (Broussard, 2018).

Instead, the intelligence part of AI refers to the ability of a "computer system to perform tasks that would normally require human intelligence" (Brennen, Howard & Kleis Nielsen, 2018, p. 1). In other words: it is about building machines that are able to compute "how to act effectively and safely in a wide variety of novel situations" (Russell & Norvig, 2021, p. 19). On a general level, AI could therefore be defined as the process of "creating computing machines and systems that perform operations analogous to human learning and decision-making" (Castro & New, 2016, p. 2). In this sense, AI becomes "a step-by-step procedure for solving problems" (de-Lima-Santos & Ceron, 2022, p. 14). Particularly in journalism, where AI-driven technology is being used for different but specific use cases, this "problem-solving"-definition of AI makes sense as the applications, as we will see later on, ranging from automatic speech recognition, to the automatic generation of written texts, to the use of bots.

1.2 Structure of the report

This report is divided into five main sections. The first section offers an overview of the current literature about AI in news and journalism, and also presents the methodology adopted in this study. After the literature, section 2 focuses on how AI is regulated at a supranational level. Section 3 looks at the particular situation in Switzerland, Finland, France, and Germany. Each country report is divided into three subchapters that tackle the following three aspects: the main thematic domains discussed in the documents, in particular with regard to media and journalism; perceived opportunities and risks; and the regulatory challenges mentioned so far in the documents. After that, section 4 dives into the specific organizations. Grounded on the empirical data, the report concludes with section 5, which contains a brief recap of the findings, a discussion of areas for future research, and some policy recommendations.

1.3 Literature review

According to Thurman, Lewis and Kunert (2019), AI has become pervasive of journalism practice, to the point that "algorithms today influence, to some extent, nearly every aspect of journalism, from the initial stages of news production to the latter stages of news consumption" (Zamith 2019). In fact, (partial) news automation is being used in news gathering (Thurman et al., 2016), news production (e.g. Carlson, 2015; Diakopoulos, 2019), news distribution (Ford & Hutchinson, 2019; Bodò, 2019), and, in particular, in news personalization (Helberger et al., 2019). This ubiquity of automated processes entails a transformational role for journalism, as "the machine is able to work automatically after initial programming to make its own selections of what content to pull, what figures to populate news stories with, what templates to use, and what content to publish. The human merely plays a 'checking' role here" (Wu et al., 2019, p. 1453). Algorithms are therefore increasingly determining editorial decisions, putting journalism's professional identity in flux, particularly with regard to the question of whether and to what extent humans remain "in the loop" (Milosavljević & Vobič 2019; Schapals & Porlezza 2020). This raises new questions with regard to "how humans and algorithms [should] be blended together in order to efficiently and effectively produce news information" (Diakopoulos 2019a, p. 8).

Especially in its early hey-days, AI technology was a primary example of a "bright and shiny things"-type of innovation that was obsessively explored, without having a clear and research-informed strategy (Posetti, 2018, p. 7). The hype in the news media industry about the technology not only stems from the technology's perceived promises to make journalism more efficient (Beckett, 2019; Buhmann & Fieseler, 2021), but also from AI's centrality in society, and the fact that many governments roll out AI strategies to gain a competitive advantage over other countries in attracting technology firms. These developments, together with the promotion of the technology from Silicon Valley and big tech companies that reinforce the "tendencies whereby managers follow trends or industry hype" (Simon, 2022), contributed to the news media's fear of missing out: they need the technology in order to keep up with technological advancements.

However, not only governments and big tech companies do contribute to the technology's perception as a savior, news media outlets themselves are a driving force in the positive

framing of the technology. Several studies show that AI's benefits are pointed out more often than its risks (Chuan et al., 2019; Fast & Horvitz, 2017). In addition, AI systems are depicted as outperforming human expertise (Bunz & Braghieri, 2022), without referring to pictures like 'Frankenstein's monster', but rather as a 'helping hand' (Cools et al., 2022). The more powerful AI becomes, the more positive the framing of AI tends to be (Cools et al., 2022, p. 17).

Besides the public discourse about AI, discussions internal to the news industry are largely positive as well. Beckett's (2019) study showed that tech-savvy experts and journalists are less worried about the potentially problematic consequences of technology. Gutierrez et al. (2021) argue along the same line by showing that journalists are upbeat about the technology, whereas ethical concerns are not taken into account (Porlezza & Ferri, 2022). Even if the number of critical perspectives on Ai technology has increased (Fast & Horvitz, 2017), it seems that AI is positively framed. This is particularly relevant to the question of AI governance because the way technology is portrayed entails consequences on how AI and automation will be regulated: "As suggested by work on performative function of hypes, irrespective of how accurate predictions about AI are, they influence agenda setting including assigning high policy priority to AI. The hype about AI is accompanied by major public controversy about positive and negative effects of AI" (Ulnicane et al., 2021, p. 171).

Overall, the field of AI governance looks at the way AI technology can and should be controlled, governed and shaped (Dafoe, 2018, p. 5). There is an increasing body of knowledge that acknowledges the need for AI governance (cfr. Mäntymäki et al., 2022), in particular, because AI does not operate in a social vacuum, for they are deeply ingrained in society and our everyday lives. However, there are diverging views on how AI governance should be defined beyond the basic idea of control. On the one hand, Butcher and Beridze (2019) define AI governance as "a variety of tools, solutions, and levers that influence AI development and applications." Floridi, on the other hand, offers a definition that has a broader scope given that it was originally intended for digital governance, but it can be applied to the use of machines in a news ecosystem as well: "the practice of establishing and implementing policies, procedures and standards for the proper development, use and management of the infosphere." Gahnberg instead offers a much more specific description of AI governance, in the sense that it can be understood as "intersubjectively recognized rules that define, constrain, and shape expectations about the fundamental properties of an artificial agent." To summarize these approaches, AI governance could be described as the way "humanity can best navigate the transition to advanced AI systems, focusing on the political, economic, military, governance, and ethical dimensions" (idem).

There are thus different approaches to the governance of AI: while some start from an "overall understanding of the wide systemic socio-technical phenomenon and suggest broader sets of integrated approaches and tools to govern such a phenomenon" (Gianni et al., 2022), alternative approaches try to integrate regulation as well as ethics (Porlezza, 2020; 2022). These ethical approaches are among the most frequently adopted perspectives (Cath, 2018; Floridi et al., 2018; Taeihagh, 2021; Gianni et al., 2022), since they focus more on practical operationalizations and principles. However, ethical approaches are not immune to critique. Radu (2021, p. 179) for instance states that ethical perspectives overshadow regulatory

interests. Other scholars like Taeihagh (2021) criticize ethical approaches as being limited in their effectiveness, while Crawford (2021) raises doubts that they are effectively able to take into account power dynamics. Gianni et al. (2022) declare therefore that "the existing governance and policy-making seems to reside at an arm's length from the suggested ethics guidelines and governance frameworks, leaving room for continuing discussion on the actual use of power and democratic mechanisms in the policy-making and governance of AI."

When it comes to the use and implementation of AI in news and journalism, ethical issues do play a central role since they concern questions of how AI-driven tools can be interwoven with ideal values like truth, freedom, solidarity as well as order and cohesion (McQuail, 2013), standards such as accuracy, sincerity and care (Couldry, 2012), or, in the case of algorithmically produced news, to key tenets such as transparency and accountability (Diakopoulos & Koliska, 2017). All these principles are regarded as prerequisites for democratic media in order to fulfill their social function. These ethical questions are crucial as "algorithms are judged, made sense of and explained with reference to existing journalistic values and professional ethics" (Bucher, 2018, p. 129).

In the case of PSM, it needs to be taken into account that PSM are part of a wider system of checks and balances in a democratic society. This can also be seen in the special responsibility attributed by the Council of Europe to its "framework by delivering a diverse, qualitative, and inclusive media offer, thereby contributing to the conditions that need to be fulfilled so that the media, citizens and the broader society optimally benefit from the freedom of expression" (Helberger et al., 2020, p. 21). In other words: PSM do have special requirements with regard to the respect of ideal values, professional values, and journalistic principles. It is therefore crucial to remember this aspect in relation to the implementation of AI, given the many challenges in terms of diversity, non-discrimination, and fairness that come with the technology (Broussard, 2018).

In this regard, specific concerns have been raised with regard to compromising "professional journalistic values such as transparency, accountability and responsibility" (Komatsu et al., 2020, p. 3; see also Ananny, 2016; Ananny & Crawford, 2018; Dörr & Hollnbuchner, 2017) since algorithms are built and coded by humans (but not mainly journalists) and therefore reflect their choices and values. Hence, PSM should not only set high standards for the responsible use of AI-driven tools, but also "aim to be pioneers and models in the application of AI ethics (…)" (Tambini, 2021). However, especially in the case of PSM the predicament is often a double bind: "its obligations to protect citizens from potential algorithmic harms are at odds with the temptation to increase its own efficiency or - in other words - to govern algorithms, while governing by algorithms" (Kuziemski & Misuraca, 2020, p. 48). In such a digital environment, PSM need to "provide a news venue where users can remain able to inform themselves with confidence that their rights to privacy and to receive information are respected. Measures should be put in place to ensure that public service media have the necessary remit, resources, and independence to fulfil this role, and the governance structure to be accountable and responsible while doing so" (Helberger et al. 2020, p. 21).

One the one hand, there is currently no shortage when it comes to code of ethics in relation to AI (Hagendorff, 2020; Jobin, Ienca & Vayana, 2019). On the other hand, the use of AI-driven tools in news and journalism is rarely object of regulation or ethical concerns. Both Beckett

(2019) as well as Porlezza and Ferri (2022) show that ethical concerns are not a primary issue in news organizations and central actors such as media managers when it comes to AI - even if automation may well pose ethical issues, as Monti (2018) demonstrates in the case of the quality and accuracy of the data used in automated (news) processes. Ethical issues may not only occur in relation to the use of data but also when it comes to clashing values such as (algorithmic) transparency and source protection. Dörr and Hollnbuchner (2016, p. 412) point out that "it is questionable whether source protection is possible or even desired as service providers and their journalistic clients should disclose all data sources in terms of data transparency" - raising also legal questions (idem: p. 414).

The problem is also reflected at the level of professional self-regulation: principles about AI are largely missing in codes of press councils (Porlezza & Eberwein, 2022). Díaz-Campo and Chaparro-Domíngue (2020) also show that principles with regard to controlling software or coding are lacking. Most current governance initiatives are focusing on news distribution and personalized recommendation systems, rather than on news production. This is mainly due to the centrality of the algorithmic distribution of news which is grounded on the importance of intermediaries as an entry point for news consumption:

> "Gatekeeping through AI-driven tools can affect individual users and the structure of the public sphere as a whole. If algorithmic personalization is taken to the extreme, combining algorithmic gatekeeping with AI-driven content production, every news article might one day reach an audience of exactly one person. This has implications for all collective processes that form the pillars of modern democracy" (Helberger et al., 2020, p. 13).

Especially in the case of PSMs, where diversity and universality are key drivers, AI-based distribution or recommendation systems do have the potential to undermine these values because they can cause bias in the news users are exposed to. This however does not mean that AI-driven tools do not have advantages, since they can, in fact, also be used in order to enhance diversity of exposure (Helberger et al., 2019). However, the opaqueness of AI-driven tools means that their use comes with specific duties and responsibilities. As Diakopoulos (2020, p. 963) states:

> "The technical and ethical challenges of encoding newsworthiness into algorithms may entail the explication of difficult-to-articulate rules, thresholds, or weightings from journalists, the development of statistical models using machine learning on appropriately labeled data, and the need for methods to evaluate how well computational operationalizations align or come into tension with normative or practical expectations of news values".

PSM have thus a duty to develop a governance framework that guides the use of AI-driven tools in newsrooms. But before that, news organizations need to understand the technology

and its use first: “If journalists start using AI-driven tools without sufficiently interrogating the tools they use and without sufficient awareness of problems that may stem from the use of AI-driven tools, including issues such as incomplete data, biased data, and faulty models, there is a risk of journalistic malpractices” (Hansen et al., 2017, p. 8, as cit. in Helberger et al., 2020, p. 17). This becomes even more relevant for PSM that are regulated to a high standard. But the endeavor is complex, as Helberger and Diakopoulos (2022) contemplate in a recently published essay about the European AI Act: “when developing regulatory approaches to AI and digital technologies, policy makers are moving in an arena of extreme technological, economic and societal complexity, a complexity few policy makers have been prepared to deal with” (Helberger & Diakopoulos, 2022).

1.4 Research design and methodology

The study applied a mixed-methods approach to investigate how the *use* of AI-driven tools mainly in *news production* is currently regulated in selected PSM. In a first step, the project carried out a desk research, evaluating relevant scholarly literature and industry reports on media and technology trends that are reshaping the specific markets, in order to know more about the position of PSM within a larger news media context. In a second step, we looked at supranational and national policies that are specifically aimed at AI in news media. In addition, we also looked at organizational code of ethics and guidelines regarding AI, in particular because newsrooms represent an important place where ethical issues in journalism are discussed on a practical and day-to-day basis (Meier, 2014). On top of that we also looked at institutions of self-regulation such as media or press councils (if existent) to analyze whether and to what extent AI represents a current issue. The governance and (legal) regulatory frameworks of AI in news media as well as the ethics codes were analyzed through a document analysis (Prior, 2003). This offered a holistic perspective on how the issue of AI is regulated - or intended to be regulated - in different countries.[1] In addition to the above-mentioned method, the study carried out qualitative expert interviews (via MS Teams) with senior editors of the PSM in charge of AI-related projects to analyze more in-depth how emerging technologies such as AI impact the news production process.[2] The data was analyzed using inductive thematic analysis (Braun & Clarke, 2014). The actual analysis was carried out with NVivo.

The sample included the following four PSMs:

1. **SRG SSR (Switzerland)**: The Swiss Public Service Media is a private association run in accordance with company law and, through a professional company, creates and provides publicly and commercially financed media content and services for the whole

[1] In Switzerland, for instance, this would include the analysis of reports such as OFCOM’s “Digital Switzerland Strategy”, the status report on a legal basis for social media, the report “*Künstliche Intelligenz, Medien & Öffentlichkeit”, but also the Federal Media Commission’s report “Zukunft der Medien-und Kommunikationsordnung Schweiz: Trends, Szenarien, Empfehlungen”.*

[2] Interviews with all Public Service Media have been carried out, except for France Télévisions, which refused to answer our calls albeit several tentatives.

of Switzerland. The main funds originate from revenue obtained through radio and television fees. Both the Swiss government as well as the parliament decide on the general framework for the public service media, while the Charter defines the public service's mandate. The charter defines the core principles and values or the public service, that is the public service obligations, the quality standards, the journalistic services, and the dialogue with the public.

2. **Bayerischer Rundfunk (Germany)**: it is a public service broadcaster based in Bavaria, Germany, and is part of the *ARD* network. The Bayerischer Rundfunk is chartered through the Bavarian State Constitution and the Bavarian Broadcasting Law, which sets out the overall guidelines for public service. It is mainly funded through the license fee, but generates revenue also from advertising and sponsoring.
3. **YLE (Finland)**: the Finnish Broadcasting Company (Yleisradio Oy) is a limited liability company engaged in public service, where the State owns and controls an amount of the company's share capital that corresponds to at least 70 percent of all the shares. Yle's operations are governed by the Act on Yleisradio Oy, which defines the duties of Yle's public service media and comes close to a Charter determining the public service's operations in detail. The company is advertising-free and financed entirely through a license fee.
4. **France Télévisions (France)**: France Télévisions, a société anonyme that includes France 2, France 3, France 4, France 5, Culturebox, France Info as well as La Première, is to 100% owned by the state of France through the so called *agence des participations de l'État* (APE). The company is financed through a license fee, advertising/sponsoring, and other public resources.

2. AI governance on a supranational level

In this chapter, the report analyzes the situation regarding the governance of AI in news and journalism. We mainly looked at two institutions, that is the European Union (EU) and the Council of Europe (CoE). The investigation concentrated on recent policy documents such as the AI Act or the Council of Europe's recommendations regarding algorithmic systems, human rights, and data protection, or the recommendations on principles for media and communication governance. Overall, media and journalism are not frequently addressed in the policy documents of the EU, while the CoE offers more specific but non-binding guidelines.

2.1 The European Union

Over the last five years, AI has become a central topic of interest for the European Union. In 2018, in its "European Strategy for AI" the Union declared that

> "like the steam engine or electricity in the past, AI is transforming our world, our society and our industry. Growth in computing power, availability of data and progress in algorithms have turned AI into one of the most strategic

> technologies of the 21st century. The stakes could not be higher. The way we approach AI will define the world we live in. Amid fierce global competition, a solid European framework is needed."

Hence, in order to enjoy the opportunities of this technology, but at the same time keep risks as low as possible, the European Union developed a specific European approach to AI that is based on excellence and trust in terms of rules and actions. In the interest of achieving this high-set goal, the European Union developed four points that need to be implemented[3]:

1. enabling the development and uptake of AI in the EU;
2. making the EU the place where AI thrives from the lab to the market;
3. ensuring that AI works for people and is a force for good in society; and
4. building strategic leadership in high-impact sectors.

In furtherance of understanding the challenges that come with AI, in 2018 the European Commission appointed a High-Level Expert Group (HLG) on Artificial Intelligence consisting of 50 experts from different backgrounds such as academic, business, and civil society. The HLG's task was to "make recommendations on how to address mid-and long-term challenges and opportunities related to artificial intelligence (AI). The recommendations will feed into the policy development process, the legislative evaluation process and the development of a next-generation digital strategy. The Group will also prepare draft ethics guidelines (…). The guidelines will cover issues such as fairness, safety, transparency, the future of work, and more broadly the impact on upholding fundamental rights, including privacy and personal data protection, dignity, consumer protection and non-discrimination."

However, one of the main issues regarding news media and journalism can already be seen in the works of the HLG on AI: although its ethics guidelines for trustworthy AI state that trustworthy AI should be lawful (by respecting all applicable laws and regulations), ethical (by respecting ethical principles and values), and robust (both from a technical perspective while taking into account the social environment as well), it does not refer specifically to media or to journalism, or references remain vague. In its Ethics Guidelines for Trustworthy AI, the HLG raises for instance the point of societal and environmental well-being, pointing out that AI can have a significant social impact or have consequences for society and democracy: in terms of its societal impact, the ubiquitous presence and use of AI systems could "may alter our conception of social agency, or impact our social relationships and attachment. (…) The effects of these systems must therefore be carefully monitored and considered." When it comes to the impact on democracy, the ethics guidelines state that AI's role "should also be assessed from a societal perspective, taking into account its effect on institutions, democracy and society at large. The use of AI systems should be given careful consideration particularly in situations relating to the democratic process, including not only political decision-making but also electoral contexts." In both of these areas, AI technology used by (social) media can affect

[3] See https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

the way that news and information is actually disseminated and consumed, but the guidelines do not mention media or journalism directly.

The HLG's considerations were further specified in the EU's White Paper published in 2020, where the need for a European policy-framework was reiterated once more. However, the document approached the issue of AI again from a general perspective, without mentioning media or journalism as a critical sector, referring to general potential risks such as bias and discrimination, opaqueness, and intrusion into our private lives.[4]

The two most significant documents with regard to the regulation of AI are currently the Digital Services Act, which has the goal "to create a safer digital space in which the fundamental rights of all users of digital services are protected".[5] The Digital Services Act is, by the way, the only document that deals with AI and automation in which the term journalism appears. In addition, compared to other policy documents, it has a clearer orientation towards consumers and their rights in a datafied society. This can also be seen in its specificity in terms of automated content or recommender systems. Art. 26 of the Digital Services Act for instance requires large platforms to carry out regular risk assessments in relation to the dissemination of illegal content, to risks regarding freedom of expression, and civic discourse or electoral processes. Paragraph two also states that very large online platforms "shall take into account, in particular, how their content moderation systems, recommender systems and systems for selecting and displaying advertisement influence any of the systemic risks referred to in paragraph 1, including the potentially rapid and wide dissemination of illegal content and of information that is incompatible with their terms and conditions."[6]

Although news media and journalism are not specifically mentioned, some of the topics the Act touches upon are nevertheless relevant to them. This can be seen in Art. 3 of the extensive definition of artificial intelligence in the AI Act draft, the most recent and specific regulatory proposal:

> "For the purpose of this Regulation, the following definitions apply: (1) 'artificial intelligence system' (AI system) means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with (…)"[7]

Overall, the AI Act includes a risk-based approach with different risk levels ranging from unacceptable applications of AI (for instance anything that has to do with social scoring or applications with the intent to manipulate human behavior), high risk (systems used in critical infrastructures, law enforcement, democratic processes etc.), systems with limited risk (for

[4] https://commission.europa.eu/document/d2ec4039-c5be-423a-81ef-b9e44e79825b_en
[5] https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package
[6] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020PC0825&from=EN
[7] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0206&from=EN

instance chatbots, where issues of transparency become relevant), and those systems that pose minimal risks to users (such as AI-enabled video games or spam filters). According to the EU, most systems will likely fall into the last category, where no real threats are foreseen. High-risk systems, instead, will have to satisfy specific checks in order to anticipate any potential risks of their systems. These measure not only apply to the use of the systems but also to their development and design. This should guarantee that the tools are used "'in the right way' (meaning in compliance with the legal requirements and standards of human-centric AI that respects fundamental rights and European values), for example through the adequate design of human interfaces" (Helberger & Diakopoulos, 2022, p. 2). At the moment, it is still unclear whether news recommenders or tool used to automate news production will likely fall into a high-risk category. It will be up to the EU to decide the risk factor of different systems, and this has already caused some uncertainty in the news industry. According to the European Broadcasting Union EBU some of the systems used by PSM might well fall into the high-risk category, putting both their use and further development at risk: the EBU specifically refers to automated journalism, where AI systems produce for instance texts or images without any help from human being except for the initial coding. On these grounds, the EBU is asking for light rules as the future deployment of these technologies could otherwise be threatened.[8]

2.2 The Council of Europe

While the European Union focuses on establishing a regulatory framework targeting specifically AI systems through its AI Act, as well as the protection of the users through the Digital Services Act, The Council of Europe's (CoE) media policy in the area of AI mainly includes non-binding instruments through guidelines, declarations and recommendations of the Committee of Ministers to member States. In addition, there are several expert commissions currently working on issues related to the use of AI in news media and journalism.

For example, the expert commission on "Increasing Resilience of Media" currently elaborates on guidelines for the responsible use of digital tools including AI in journalism. These guidelines are among the most specific rules and principles that are currently elaborated on when it comes to the use of AI technology in journalism. The purpose of these guidelines is to carve out principles for creating the conditions for responsible use of AI in journalism. These guidelines should be concluded and published by the end of 2023.[9] In its first meeting report, the Committee of Experts on Increasing Resilience of the Media declared that the guidelines will not only apply to the use of AI systems, but also to the "design and development of AI-powered tools used in journalism" and that they "should comply with certain universal principles related to the ethical use of AI including contestability, accountability and explainability." The guidelines should also take into account the interdisciplinary nature of the

[8] https://www.ebu.ch/news/2022/09/ai-act-high-risk-ai-systems-need-more-nuance

[9] https://www.coe.int/en/web/freedom-expression/msi-res/-/asset_publisher/NGn6YltpDrYp/content/committee-of-experts-on-increasing-resilience-of-the-media-msi-res-held-its-first-meeting?inheritRedirect=false

technology, for different actors and professions such as engineers, data scientists, and computer scientists are collaborating on the development of AI tools. Relevant for this report is the fact that the Commission also discussed the particular role of PSM when it comes to the development of AI technology, as the tools need to serve the public interest and to embed the values of universality, diversity, inclusion, relevance, serendipity etc. In particular when it comes to personalization and news recommender systems there might be distinctions between commercial media and PSM due to their different responsibilities.[10]

Compared to the EU, the CoE is much more specific when it comes to the evaluation of risks of AI on news media and journalism, even if the policies are obviously non-binding. In addition to the guidelines on the responsible use of digital tools including AI in journalism, in April 2022 the Committee of Ministers adopted the Recommendation CM/Rec(2022)11 of the Committee of Ministers to member States on principles for media and communication governance. The recommendations include principles regarding content production such as ensuring transparency, in particular when it comes to the "disclosure of the use of and potential bias resulting from algorithmic systems in content production, the use of which must respect human rights and fundamental freedoms."[11] In addition, the recommendations also include principles with regard to algorithmic curation, selection and prioritization:

> "Media and communication governance should aim to mitigate the risks to the safeguarding of human rights and the democratic process posed by algorithmic curation, selection and prioritization. This includes respecting human rights and fundamental freedoms in the design, development and ongoing deployment of algorithmic systems used for content dissemination. It also involves enhancing the transparency and explainability of such algorithmic systems as well as the accountability of those developing and implementing them, and taking measures to enhance exposure diversity, such as encouraging platforms to offer alternative forms of personalization compatible with the public interest as well as strengthening the role of public service media in offering personalized services."

Overall, the CoE is much more specific with its guidelines and principles when it comes to the design, use, and implementation of AI technology in news media and journalism - and puts a particular emphasis on PSM - compared to the EU. However, it needs to be taken into account that the CoE's recommendations are non-binding, which might well impact the guidelines' effectiveness when it comes to their adoption in media organizations.

The main European laws on which Switzerland relies with respect to AI management are the European Declaration of Cooperation on Artificial Intelligence, fundamental rights such as freedom of expression or freedom of information and opinion, as well as the protection of privacy. Furthermore, Switzerland take into account for instance the "Recommendation of the

[10] https://rm.coe.int/msi-res-2022-03-1st-meeting-report-en-19-4-2022/1680a68598
[11] https://search.coe.int/cm/Pages/result_details.aspx?ObjectId=0900001680a61712

Committee of Ministers of the Council of Europe on the human rights impacts of algorithmic systems", the White Paper on Artificial Intelligence – "A European Approach to Excellence and Trust' and "Ethics Guidelines for Trustworthy AI' by the Independent and High-Level Expert Group on AI, established by the European Commission".

2.3 A Swiss way?

Overall, Switzerland often refers to and takes inspiration from European policy documents and regulations regarding AI. According to official policy documents such as the "Künstliche Intelligenz und internationales Regelwerk" report to the Federal Council realized by the Federal Department of Foreign Affairs, Switzerland should not passively adopt the regulatory approaches proposed by the EU, but rather actively promote its own positions. Not surprisingly, Switzerland participates in a variety of European and international projects on AI related to various organizations, such as United Nations Educational, Scientific and Cultural Organization (UNESCO), Organization for Economic Co-operation and Development (OECD), International Telecommunication Union (ITU) or the United Nations (UN). According to a recently published position paper by the Digital Society Initiative (University of Zurich), there is a need for action in Switzerland since the risks associated with the use of algorithmic systems both by companies and the state are sufficiently clear.[12] Switzerland should therefore start to develop standards that can adequately address AI-related challenges outlined.

When it comes to European policy documents, the White Paper on Artificial Intelligence – "A European Approach to Excellence and Trust" and the "Ethics Guidelines for Trustworthy AI" by the Independent and High-Level Expert Group on AI play a central role in the reflections on potential regulatory approaches. Currently, also the AI Act has come under close scrutiny due to the fact that it will have consequences for the Swiss market as well.[13] On top of that, Switzerland also takes into account the Council of Europe's "Recommendation of the Committee of Ministers of the Council of Europe on the human rights impacts of algorithmic systems". However, the current policy approach when it comes to international governance could be summed up as follows: as much freedom as possible, as little regulation as necessary.

3. National AI governance strategies

In this chapter, we look at the governance approaches in relation to AI of four different countries: Switzerland, Germany, France, and Finland. Overall, the analysis of national policy frameworks shows that there are significant differences in the regulatory approaches, but also many similarities in terms of the overall strategy in combining regulatory overhauls and the creation of self-regulatory ethical principles.

[12] https://www.dsi.uzh.ch/dam/jcr:3a0cb402-c3b3-4360-9332-f800895fdc58/dsi-strategy-lab-21-de.pdf

[13] The regulation applies when an AI system is deployed within the EU or its output is somehow "used" in the EU. This applies, for instance, when Swiss companies make their systems available to companies, public bodies or people based within the EU.

3.1 Switzerland

Overall, Switzerland adopts a wait-and-see attitude when it comes to the regulation of AI, closely observing what happens at the international level, particularly within the European Union and the Council of Europe. In addition, Switzerland is also actively collaborating with UNESCO (United Nations Educational, Scientific and Cultural Organization), promoting a worldwide dialogue on ethical aspects and the effects AI might have in society through the report “Ethische Aspekte und die Auswirkungen von KI auf die Gesellschaft”, and it is a member of the AI Expert Group created in 2018 by the Organisation for Economic Co-operation and Development (OECD). At the same time, different expert groups such as the Federal Media Commission FMEC or the interdepartmental group on artificial intelligence are analyzing the current situation in different domains, trying to develop country-specific strategies grounded both on international developments and input from scholarly debate.

The most relevant documents in relation to AI in the media are the following: in 2017 The Federal Media Commission (FMEC) published its position paper “Zukunft der Medien- und Kommunikationsordnung Schweiz: Trends, Szenarien, Empfehlungen”, a document that examines current media-related trends and transformation processes in Switzerland, and shows potential challenges and recommendations. In 2018, the Swiss Federal Council published the “Action Plan of the Digital Switzerland Strategy” as well as the "New guidelines for digital Switzerland”, listing various measures intended to achieve the goals of the first overall “Digital Switzerland Strategy”. In 2019, the Swiss confederation publishes a document specifically looking at AI in its more international development and regulation: “Internationale Gremien und künstliche Intelligenz” Bericht der Projektgruppe “Internationale Gremien und künstliche Intelligenz”. Still in 2019, the “Digital Switzerland Action Plan - status 09.2019" is published to show the current state of the measures chosen a year earlier. Furthermore, at the end of 2019, the Federal Department of Economic Affairs, Education and Research (EAER) and the State Secretariat for Education, Research and Innovation (SERI) publish the report “Herausforderungen der künstlichen Intelligenz - Bericht der interdepartementalen Arbeitsgruppe ‘Künstliche Intelligenz’ an den Bundesrat”. This document aimed to understand whether there is a need to adapt the legal framework in this field. In 2020, the new “Digital Switzerland Strategy” was published by the Federal Council. Afterwards, in 2021, the Confederation develops a “Competence Network for Artificial intelligence”.

Overall, Switzerland has three main fields of action (which are not directly related to journalism): The first is to strengthen the national and international network for knowledge exchange on artificial intelligence together with international and supranational institutions. The second field of action is to try to improve global governance with regard to artificial intelligence and develop the topic of artificial intelligence within the Foreign Policy Strategy 2020-2023. And the third field of action is to set “International Geneva” as the center of AI governance worldwide.

When it comes to the risks of AI in the media and journalism, the main document is called “Künstliche Intelligenz, Medien & Öffentlichkeit – Bericht der Projektgruppe ‘Künstliche Intelligenz, Medien & Öffentlichkeit’”, and was published in 2019. The document was prepared by the interdepartmental working group “Artificial Intelligence” of the Federal Office

of Communications with the participation of the Federal Chancellery. This report analyzes the issue of AI through two major elements, mass media and intermediaries.

The document that refers more often to “Journalism” is the FMEC document “- Zukunft der Medien- und Kommunikationsordnung Schweiz: Trends, Szenarien, Empfehlungen” followed by “Künstliche Intelligenz, Medien, & Öffentlichkeit”. However, in the first document the word "Artificial Intelligence" does not emerge, while in the second it often occurs. Furthermore, the document “Künstliche Intelligenz, Medien, & Öffentlichkeit” is one of two documents in which the word “Ethics” appears quite frequently, the other document is the SERI-document “Herausforderungen der künstlichen Intelligenz - Bericht der interdepartmenetalen Arbeitsgruppe «Künstliche Intelligenz» an den Bundesrat”.

3.1.1 Thematic domains

The three domains that are most often mentioned in the documents when it comes to the application of AI in journalism are:

- news aggregation/selection,
- news production, and
- news distribution

AI use in information selection or aggregation means either the aggregation of data and information and/or the automatic analysis of a large amount of data. This data can then be used for the creation of visualizations such as infographics, or the automatic evaluation of the source credibility of social media accounts. Two specific examples are mentioned in the documents: Tamedia’s Data Mining tool *Tadam,* and *Zombie*, made by Le Temps and Ringier Axel Springer.

AI in the production phase is mostly used for automatic text-creation (e.g. through Natural Language Generation, NLG), for video and audio editing, automated translations, or the creation of databases. In Switzerland, two examples of software using AI to produce information are quoted: *Lena* by the News Agency Keystone-SDA, and *Tobi* by Tamedia. It emerges from the documents that there seems to be a dichotomy between the private sector, which is rather active in the development of AI technology, and the public service, which is not referred to.[14]

When it comes to the distribution phase, AI is predominantly applied in the form of algorithmically driven news recommenders that personalize information. Concrete examples mentioned are *NZZ Companion* (Neue Zürcher Zeitung), *Sherlock* (Ringier Axel Springer) and *AINews* (La Liberté).

[14] This does not necessarily reflect the current situation in the Swiss media system. First, because these are only the results of the analysis of policy documents, and second, because these documents might no longer be up-to-date.

3.1.2 Risks and opportunities

One of the most often mentioned benefits in relation to the use of AI is the potential to free journalists from repetitive and tedious tasks such as the creation of statistics. It also means that it empowers newsrooms to analyze large amounts of data in relatively short time, especially in relation to leaks, where millions of documents and files need to be analyzed. This is also true for the distribution phase, where data on user behavior can be used to better target and personalize content, which in turn might be converted into paying subscribers.

Algorithms are also seen as sources of new information for they can promote the display of information that the user does not usually access. This kind of serendipitous discovery can help the formation of opinion as well as broaden the users' knowledge.[15] In this context, the Strategy Digital Switzerland 2018 declares the significant importance of public service media in providing information to the public:

> "In a digital, global and at the same time increasingly fragmented media world, where people tend to turn more to Internet offerings at the expense of traditional media, the role of the public service to get a better understanding of the political and social context is even more important than ever. This requires independent, reliable and broad media offerings that are also on the Internet, and that are directed at the entire population. The public service promotes mutual understanding, cohesion and exchange between the country's regions, language communities, cultures, religions and social groups, taking due account of the country's particularities and the needs of the cantons. Public service supports political participation and strengthens democracy as well as respect for fundamental rights. Switzerland is also committed to quality and ethical responsibility in journalism."

However, the documents also mention several risks that come with the technology. The most often stated risk concerns the production and dissemination of disinformation across multiple platforms. Associated with this phenomenon are the risks related to bias and discrimination, in particular when it comes to users' access to information: algorithms can both facilitate and restrict access to information and thus be used to limit or boost diversity (see also Möller et al., 2018). In addition, the documents refer to the fact that news is increasingly being accessed online and through social media, where algorithms play a crucial role in news dissemination. The selection or distribution phases of information can also be influenced by the use of AI, such as social bots or algorithms. Social bots for example can act as if they were real users, which can be a risk for the opinion formation process should they be used to pollute the information ecosystem through computational propaganda, with the consequence of manipulate public opinion and thus dividing society. Furthermore, information selection is

[15] This is also supported by research, as Helberger (2019) has shown.

also at risk given that algorithms are opaque, and it is not clear how they select and display information to the users.

3.1.3 Regulatory challenges

When it comes to current regulatory issues of AI, Switzerland evaluates its regulatory framework as sufficiently elaborated, but in need of *clarification* regarding specific areas. For instance, grounded on the report by the interdepartmental working group AI in 2019, the government declared that:

> "At the present time, the general legal framework in Switzerland is basically suitable and sufficient to deal with novel AI challenges. This includes questions of traceability, possible discrimination or liability issues of autonomously acting AI systems. On the other hand, there is sometimes a great need for clarification and adaptation in various policy areas. These include, for example, the use of AI in mobility, in security policy or in education and research. In most areas, however, a large number of measures have already been initiated to address the challenges."[16]

The report itself is even clearer regarding future measures:

> "The relevant legal principles are generally formulated in a technology-neutral way, so that they can also be applied to AI systems. The existing legal framework thus permits and limits the use of AI in principle. This also applies in particular to discrimination that may arise on the basis of AI decisions. A responsible use is consequently defined by the value system underlying the legal norms and guaranteed by their observance within the legal system. Thus, there is no need for fundamental adjustments to the legal framework."[17]

At the same time, the report points out that there are specific areas, in which there is a need for closer observation, such as the area of *opinion formation and the public sphere*. In other words: (news) media have been recognized as a sensitive area for further inquiry. This is a complex issue, given that different departments and issues need to be ingrained - as can be seen in the several initiatives: in 2018, Switzerland for instance adopted the "Declaration on Ethics and Data Protection in Artificial Intelligence", which enshrines principles to ensure that human rights are respected in the use of AI. In this regard, a working group dealing with ethics

[16] https://www.sbfi.admin.ch/sbfi/de/home/aktuell/medienmitteilungen/news-anzeige-nsb.msg-id-77514.html
[17] Herausforderungen der künstlichen Intelligenz - Bericht der interdepartementalen Arbeitsgruppe «Künstliche Intelligenz» an den Bundesrat: Seiten 8-9.

and data protection inherent in artificial intelligence has been created. In addition, when it comes to platforms, the Federal Media Commission declares that the intermediaries must face their social responsibility, in particular because their algorithms have a significant impact on the procurement and distribution of information. The Commission concludes that there is an increasing need for co- or self-regulation, but that would be needed to be coordinated at an international level.

Regarding the media sector in particular, the Federal Media Commission FMEC promotes the consolidation of self-regulation regarding AI. The suggestion is to empower the Swiss Press Council given that it represents the main professional institution of self-regulation for media ethics: "Strengthening self-regulation would prevent the increase in regulation and state intervention that can currently be seen throughout Europe."[18] The document analysis demonstrates, that there are no specific regulatory suggestions that go beyond a general request for the improvement of co- and self-regulation (with the resulting responsibility of the Swiss Pres Council). On the contrary, also in the news and journalism domain, the current strategy seems to be one of monitoring the evolution of ethical issues related to AI at the international level first, and then take a decision on how to proceed at the national level. To summarize, the 2019 report elaborated by the project group "Artificial Intelligence, media & public sphere", concludes:

> "In the case of so-called algorithmic journalism, a fundamentally new quality of news production is unlikely to result from the use of AI for the time being. Nor has any deterioration in journalistic quality been observed so far as a result of the use of AI (cf. Goldhammer et al. 2019, p. 27). It is true that questions regarding traceability, transparency and responsibility also arise in the media sector due to the use of AI. However, as long as the media commit themselves to working according to journalistic criteria, or the corresponding regulations can be enforced on the basis of the RTVG (SRG SSR/online, radio and television), there is no need for regulation with regard to the use of AI or algorithms." (p. iv)

Especially in the case of the public service media SRG SSR, the current regulatory framework applies to journalistic content independently of whether news and information is created by human beings or with the help of AI technology. This means that the use of algorithms in news and journalism - at least from a regulatory perspective - is not seen as a fundamental game changer, because the news production has to respect what is set out in the mission assigned to SRG SSR under the Swiss Federal Constitution, the law and the SRG SSR Charter. However, the report also states that Switzerland should continue to observe both international developments as well as the scientific debate revolving around the implications of AI in news and journalism.

[18] https://www.emek.admin.ch/inhalte/pdf/D_MUKOS_FINAL_25.9.17.pdf, page 28

Overall, the challenges of AI in news and journalism do not seem to be of primary importance at the moment given that the general legal framework in Switzerland is seen as sufficiently elaborated to deal with novel AI challenges. If governance approaches are considered, forms of self-regulation are mostly mentioned, without specifying the details. In addition, expert reports suggest to closely observe media policy trends and activities at an international level, in particular in Europe, but also to become more active in developing principles proactively, without waiting any longer given that many risks are already known.

3.2 Germany

In November 2018, the German government adopted a new AI strategy laid out in the "Nationale Strategie für Künstliche Intelligenz". With this strategy, the German government aims to make Germany a leading country when it comes to the development of AI technologies. The AI strategy includes five main objectives:

- making Germany a global leader in the development and use of AI technologies and securing Germany's competitiveness in the future,
- safeguarding a responsible and public welfare-oriented development and use of AI,
- understanding AI solutions as a contribution to the environment and climate protection,
- ensuring a broad social dialogue, and
- building a European AI ecosystem that expands the competitiveness of business and research and promotes diverse AI applications in the interest of society based on European values.

Germany's National AI Strategy proposes a general framework that offers guidance regarding central questions related to AI, such as individual liberties, autonomy, personal rights, or the individual's freedom of choice against the backdrop of rapid technological developments. The AI strategy for Germany was developed by experts from different disciplinary backgrounds. The AI strategy is designed as a "learning strategy that needs to be continuously readjusted jointly by politics, science, business and civil society".[19]

Before the launch of Germany's national AI strategy, the German government created the Data Ethics Commission (Datenethikkommission) in 2018 to develop ethical standards and guidelines as well as concrete recommendations for the protection of the individual, the preservation of social coexistence and society, and to safeguard and promote prosperity in the information age. The Commission contributed to the national AI strategy especially in the area of ethical and legal principles, but also with regard to the promotion of the ability of individuals to understand the impact of AI in society.[20] Based on these initial works, in 2019, the Data Ethics Commission published a detailed report. It analyzed the consequences of

[19] https://www.ki-strategie-deutschland.de/home.html

[20] https://www.bmi.bund.de/SharedDocs/downloads/DE/veroeffentlichungen/themen/it-digitalpolitik/datenethikkommission/empfehlungen-datenethikkommission.pdf?__blob=publicationFile&v=3

digital technologies such as algorithmic systems on society, in which news media and intermediaries - as will be shown - play a critical role.

In 2019 and in 2020, the government published interim reports about the impact of the National AI Strategy: first, the "Zwischenbericht ein Jahr KI -Strategie"[21], in which the advancements in the field are shown, and second, the "Strategie Künstliche Intelligenz der Bundesregierung – Fortschreibung 2020"[22]. But unlike Switzerland, there is no specific federal report that looks specifically at the uses and risks of AI technology in news media and journalism. However, there is a specific project group called „KI und Medien (Social Media, Meinungsbildung und Demokratie)", composed of members of the parliament and experts that looked into the issue of AI and the media in journalism, media policy and opinion formation. In particular, the project group looked dealt with questions of production and distribution of media content with the help of AI, as well as related regulatory issues.

3.2.1 Thematic domains

Media and journalism play a minor role *as a field of inquiry*. In other words: the issues at stake are defined at a more general level. However, this does not mean that media or journalism never appear in the documents. Still, they appear as elements to describe the current media ecosystem, not as industries, where AI plays a crucial role, or even as case studies.

Hence, four media-related thematic domains emerge from the document analysis:

- general ethical principles about AI or algorithmic systems,
- the need for increased media literacy, and
- the role of media intermediaries with a gatekeeper function and the corresponding need for regulation, and

According to the Data Ethics Commission, a responsible approach to algorithmic systems should be guided by the following principles:[23]

- *Human-centered design*: systems must focus on the people who use the systems and are affected by their decisions; their basic rights and freedoms, their physical and emotional well-being, their skill development, and their basic needs must remain intact,

[21] https://www.bmbf.de/bmbf/shareddocs/downloads/files/zwischenbericht-ki-strategie_final.pdf?__blob=publicationFile&v=1
[22] https://www.bmwk.de/Redaktion/DE/Publikationen/Technologie/strategie-kuenstliche-intelligenz-fortschreibung-2020.pdf?__blob=publicationFile&v=12
[23] https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/it-digitalpolitik/gutachten-datenethikkommission.pdf?__blob=publicationFile&v=7

- *Compatibility with fundamental social values*: the design of AI technology needs to take into account fundamental social values, and the effect of the technology on them, in particular when it comes to opinion forming,
- *Sustainability*: participation, environmental protection and sustainable resource management are of high importance,
- *Quality and performance*: algorithmic systems must function correctly and reliably.
- *Robustness and security*: AI systems must be secured against external influences, and they need to avoid dysfunctional effects on its users,
- *Minimizing bias and discrimination*: algorithmic systems need to avoid any systematic biases that lead to discriminatory decisions,
- *Transparency, explainability, and traceability*: users need to understand how the systems work, and they need to be controllable,
- *Clear accountability structures*: AI systems must assign clear responsibilities, including potential liability.

When it comes to the fundamental principles that should lead the development and implementation of AI technology, transparency, traceability, non-discrimination and verifiability are particularly often mentioned as central standards that systems (not limited to journalism, but overall) must comply with. These principles need to be implemented to a sufficient degree within the systems in order to generate trust in these technologies by the larger public.

Another central topic identified in the documents is the importance of media literacy. The government plans to involve people as much as possible in the debate around AI. Still, it has recognized at the same time since AI is becoming increasingly more pervasive in society, that workers will have to acquire new skills in understanding and handling AI in their specific line of work. In this sense, the German Federal Government supports the acquisition of AI skills by the population through a specific online course called "Elements of AI" that aims to explain to citizens the logics of artificial intelligence and the different fields of application.

The third theme concerns the need for regulation. Germany has a clear position about AI technology: "Ethical requirements and the rule of law should be the principles guiding the entire development process and the use of AI – and should safeguard the hallmark of 'AI made in Europe'".[24] The willingness to intensify the discussion about AI regulation is also supported by the fact that not only the German Data Ethics Commission has been working on new data-related regulations, but there is an entire chapter in the German "Artificial Intelligence Strategy" that looks into the question about how to adapt the regulatory framework.

3.2.2 Risks and opportunities

The summary of the works of the parliamentary project group (published on September 25, 2020) "KI und Medien" represents to date the only specific opportunities and risks analysis carried out about news media and journalism. The report states that AI-driven

[24] Artificial Intelligence Strategy, p. 38

recommendation and filtering systems offer, on the one hand, new opportunities for citizens to engage in political discussions. On the other hand, they also pose risks in terms of highly personalized information-spheres primarily created for targeted ad placements. In addition, the project groups declare that AI systems are not transparent and understandable to users, researchers, or even regulators. According to the project group, this point in particular makes it necessary to rethink media policy and regulation in the media sector.

Figure 1 - Opportunities and risks of AI in the Media (in German)[25]

STRENGTHS (Stärken)		
Starke demokratische Basis durch Presse- und Meinungsfreiheit auf Grundlage des Grundgesetzes	Vielfältiges Angebot von Anbietenden über alle klassischen und modernen Medien	unabhängiger Journalismus ermöglicht eine pluralistische Öffentlichkeit
ausgeglichenes, duales Rundfunksystem von privatem und öffentlich-rechtlichem Rundfunk		
WEAKNESSES (Schwächen)		
Daten-, Urheber-, Medien- und Wettbewerbsrecht sind teils noch nicht an das moderne Medienzeitalter angepasst	Landesmedienanstalten sind noch nicht modernisiert (fehlende fachliche Expertise, veraltete Angebotsformate)	Ausbaufähige Digitalkompetenz in allen Alters- und Bevölkerungsschichten. Technischer Sachverstand hinsichtlich KI-Anwendungen aufseiten des Gesetzgebers, der Bundes- und Landesregierungen und Verwaltung noch nicht ausreichend vorhanden.

[25] https://www.bundestag.de/resource/blob/794590/7aa0a9262c1f928ffd9de9176d3355f4/PG-6-Projektgruppenbericht-data.pdf

WEAKNESSES (Schwächen)		
Anbieter aus Drittstaaten ziehen zumeist ökonomischen Nutzen aus Datensammlung, -speicherung und -verarbeitung, Durchsetzung der DSGVO meist erschwert, KI-Anwendungen in deutschen Medien sind oft von diesen Unternehmen abhängig oder richten sich mindestens danach	Fehlender Zugang zu Daten für Forschungszwecke im Bereich KI und Medien	Aktuell existierende Kompetenzen zur Medienprüfung liegen verstreut über Fachabteilungen in der Forschung, bei Redaktionsnetzen oder dem Bundeskriminalamt
OPPORTUNITIES (Chancen)		
Einfache redaktionelle Texte (Wetter, Staumeldungen, schnellere Recherche etc.) können häufiger und schneller produziert werden, Nischenthemen wie Randsportarten lassen sich automatisiert leichter erstellen und verbreiten	Erweiterung der Möglichkeiten für Journalisten, die sozialen Medien als Quelle auszuwerten	KI-Anwendungen könnten analysieren, ob sich Nutzende in Filterblase bewegen und Empfehlungen danach anpassen
Deutschland kann individuellere Angebote für Konsumentinnen und Konsumenten als USP und dadurch einen größeren Meinungsmarkt (z. B. via Medienavatar) generieren	KI-Anwendungen können dazu genutzt werden, sogenannte Fakes zu identifizieren und automatisiert kenntlich zu machen, gleichzeitig könnten sie ein hilfreiches Tool gegen Hassrede im Internet sein	Aufbau einer unabhängigen Einrichtung zur Unterstützung der technischen Prüfung von Medieninhalten
Algorithmen können zur Überwachung von algorithmischen Empfehlungssystemen eingesetzt werden - Governance by Algorithms	KI ermöglicht neue Geschäftsmodelle und neue Kooperationen zwischen klassischen Medienhäusern und Tech-Unternehmen	KI-Anwendungen können dazu genutzt werden, sogenannte Deep Fakes zu identifizieren; weiterhin können KI-Anwendungen dabei unterstützen, unerwünschte oder widerrechtliche Inhalte zu identifizieren und für eine menschliche Überprüfung vorzufiltern.
THREATS (Risiken)		
Medienkonzentration bzw. zunehmende Marktmacht einzelner Intermediäre	Filterblasen und politisches Microtargeting können Radikalisierungstendenzen verstärken und zu Missbrauch in der Datenverarbeitung bis hin zu gezielten Desinformationskampagnen führen	Overblocking von Inhalten durch nicht ausgereifte automatisierte Lösungen können die freie Meinungsäußerung gefährden. Es besteht darüber hinaus das Risiko, die Rechtsdurchsetzung auf Algorithmen bzw. privatwirtschaftliche Unternehmen auszulagern

3.2.3 Regulatory challenges

The current regulatory challenges that emerge from the document analysis can be summarized in three different areas:

- The use and regulation of data,
- a risk-based approach to the regulation of AI, and
- ethical principles and standards.

When it comes to the issue of data handling, ensuring high-quality data is seen as an essential requirement to develop robust and trustworthy automatic decision-making processes. In this regard, ways must be found to make data collection and access easier without loosening fundamental rights or data protection laws such as GDPR. In this context, the German government explicitly states that potential regulation would need to take into account the European level:

> "With regard to methods of AI and machine learning, the availability and quality of data are central preconditions and determining factors for the quality of outcomes. At the same time, the security of a useful data basis is of essential importance. However, access to data is restricted in many cases – partly for legal reasons, and partly due to the fact that the de-facto control of the data rests with public-sector and private-sector bodies. In order to achieve the goals set out in this strategy, the quantity of useful, high-quality data must be significantly increased without violating personal rights, the right to control one's own data or other fundamental rights. (…) In order to keep up with the potential offered by the amount of data available in other parts of the world, the conceptual work and actions need to take place directly at EU level. (…) If this data involves personal data, data protection rules need to be respected."[26]

In its recent report, the German Data Ethics Commission has discussed the relevant issue of data primarily from the perspective of their origin, as well as the potential impact of data processing on all the actors involved (those who generate data as well as those who collect, analyze and create value out of it), and on society. According to the Commission, when specific actors are collecting, processing or disseminating data, they must evaluate possible effects on individuals or the general public by taking into account future accumulation-, network- and scale effects, potential technological possibilities and changing actor constellations. Five different data-ethical principles need to be respected: Anticipating the responsibility in handling data, respect for the rights of all the individuals involved, the production of beneficial outputs through the use and sharing of data, respecting adequate data quality, guaranteeing risk-adequate security, and offer transparency appropriate to the interests at stake. These principles are particularly relevant when it comes to issues such as data deletion, data correction, access to data, and potential economic participation based on the use of data.[27] These principles would be applied universally, including in the news industry.

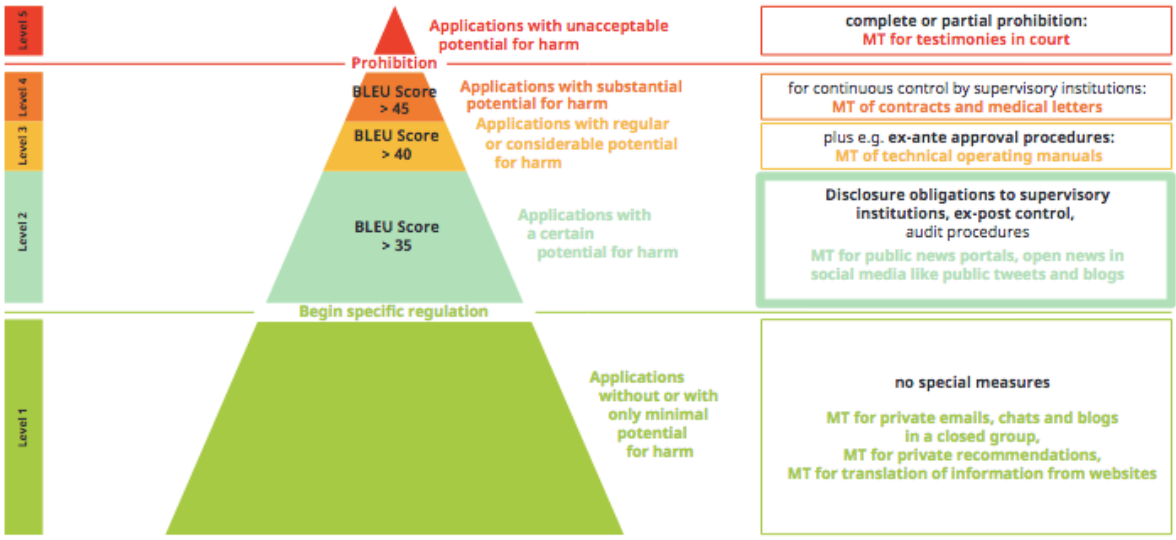
In relation to the evaluation of the specific risks that certain AI-driven technologies entail, the German Data Ethics Commission suggests applying a risk-based strategy similar to the one proposed in the EU's AI Act. The concrete requirements that algorithmic system have to fulfill

- especially about transparency and control - depend on the criticality of the system, which is determined through an analysis of the damage potential of the algorithmic system. The damage potential is calculated on the grounds of a) the probability that a damage occurs, and b) the severity of the damage. This so-called "Systemkritikalität" is exemplified in the figure below with the case of AI systems for automatic translation. The criticality pyramid also takes into account public news portals and intermediaries where disclosure obligations would apply.

[26] Artificial Intelligence Strategy, p. 32

[27] See https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/it-digitalpolitik/gutachten-datenethikkommission-kurzfassung.pdf?__blob=publicationFile&v=5 on page 10.

Figure 2 - The criticality pyramid and a risk-adapted regulatory system for the use of automated translations[28]



The report authored by the German Data Ethics Commission refers specifically to media intermediaries regarding a risk-based approach for AI systems. According to the Commission, media intermediaries such as search engines are central players in the current news ecology, which is ethically not problematic. However, they offer personalized information offers to users, which can have an impact on the range of information one is provided:

> "Insofar as the business models of media intermediaries are advertising-driven, as is the case of large social networks, there is a risk that operators, out of an economic interest, disseminate ethically questionable or even extremist content, because it allows to increase the time users spend on the platform, which in turn increases advertising revenues."[29]

The Commission evaluates this as a danger to the free formation of opinion at the basis of democracy - in particular because to an increasing extent also established news organizations, and not only search engines, are adopting algorithms for content personalization and news recommendation. Ethical issues are a primary concern of the German government and its expert commissions. In a joint project between DIN and the Federal Ministry for Economic Affairs and Energy, together with 300 experts from industry, science, the public sector and civil society, the result of this extensive collaboration is a German Standardization Roadmap Artificial Intelligence. In the words of the report's authors: "The aim of this Roadmap is the

[28] See https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/it-digitalpolitik/gutachten-datenethikkommission.pdf?__blob=publicationFile&v=7 on page 177
[29] See https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/it-digitalpolitik/gutachten-datenethikkommission.pdf?__blob=publicationFile&v=7 page 176

early development of a framework for action for standardization that will support the international competitiveness of German industry and raise European values to international level."[30]

The Roadmap's goal is to contribute to explainability and security and therefore to support acceptance and trust in AI applications. In addition, the government's re-evaluation of the legal framework should also guarantee an ethical and responsible design and use of AI technology.

The national ethical reflections are but one level of activity. The German government establishes in its AI Strategy that "Based on our values governing the deployment and use of AI systems, we will take into account the results achieved by the relevant national commissions – including the Data Ethics Commission and the Study Commission – and feed these into the relevant working groups and/or negotiations on guidelines and ethical standards on AI. This approach is shared by other European member states such as France and Finland. Germany advocates taking a European approach to the use of AI."[31] However, a multilevel approach in terms of setting new ethical standards and principles that allow for responsible use of AI technology represents only one-half of all national enquiries. Additionally, the federal government will review the legal framework governing the use of data for AI-based applications, and it will also

> "ensure that the use of AI technology will not undermine the fundamental rights enshrined in the constitution – including in particular the general freedom of action, the protection of privacy, and control of one's personal data. The Federal Government advocates using an "ethics by, in and for design" approach throughout all development stages and for the use of AI as the key element and hallmark of an 'AI made in Europe' strategy."[32]

In addition to the already mentioned institutions, such as the Data Ethics Commission, the parliamentary project group "KI und Medien" has also reflected on regulating AI in the field of (news) media. It concludes that AI has already started to transform many areas within media and journalism, from digital assistants that convey journalistic content and thus displace traditional journalism in some areas, to media offerings that are personalized through algorithms, to new tools that can be used in the future to detect hate speech, deep fakes or copyright infringements. However, there are still many unanswered questions in particular regarding user data, how news media can and will ensure diversity, and how they will protect the (personal) data they use. According to the project group, media customers should not only trust the distributed content, but they must also be able to rely on the way their data is handled. In many areas, the project group notes therefore a great need for additional research in order to assess the impact of AI systems on the formation of (political) opinion and on news

[30] See https://www.din.de/resource/blob/772610/e96c34dd6b12900ea75b460538805349/normungsroadmap-en-data.pdf page 4

[31] Artificial Intelligence Strategy, p. 42

[32] Artificial Intelligence Strategy, p. 37

work. The project group therefore suggests an intensified dialog between society, the media and politics in order to understand what is desirable, and to tackle undesirable trends. They do not make a special case for public service media, but declare that news media content from public and private media companies shall be found on all networks to guarantee net neutrality and freedom from discrimination.

In Germany, the regulation of AI technology is also linked to the "Medienstaatsvertrag", which regulates the duties and the rights of the broadcasting and telemedia companies. Since November 2020, when the "Medienstaatsvertrag" replaced the old "Rundfunkstaatsvertrag", intermediaries are now included in the regulatory framework, particularly when it comes to the role of algorithms and AI in the distribution of media content. §93 of the contract states the following:

> Anbieter von Medienintermediären haben zur Sicherung der Meinungsvielfalt nachfolgende Informationen leicht wahrnehmbar, unmittelbar erreichbar und ständig verfügbar zu halten:
>
> 1. die Kriterien, die über den Zugang eines Inhalts zu einem Medienintermediär und über den Verbleib entscheiden,
> 2. die zentralen Kriterien einer Aggregation, Selektion und Präsentation von Inhalten und ihre Gewichtung einschließlich Informationen über die Funktionsweise der eingesetzten Algorithmen in verständlicher Sprache.[33]

Media intermediaries must disclose the criteria they use to select and present content. The rationale behind this regulation is to tackle AI-driven distribution processes, albeit in the current version, only intermediaries such as platforms are bound by this regulation, while traditional broadcasters do not have to abide by these additional regulations.

3.3 France

The main document France refers to when it comes to AI, policy and governance is called "For a meaningful artificial intelligence towards a French and European strategy". The parliamentary mission was assigned by the Prime Minister of France, Édouard Philippe, from 8th September, 2017, to 8th March, 2018. The task force was led by Cédric Villani, a mathematician and member of the French parliament. The report addresses that AI now plays a much more important role than it has so far. According to the authors, it has exited the laboratories and become pervasive in society, representing a key technology for the future. Therefore, the report states that "in a world marked by inequality, artificial intelligence should not end up reinforcing the problems of exclusion and the concentration of wealth and resources." The report does not focus specifically on news media or journalism, but similarly to the German AI Strategy, it lays out the overall approach that the French government should apply when it comes to future governance of AI technology. These policies should primarily focus on a policy of inclusion by reducing the social and economic inequalities, and making

[33] See https://www.landesrecht-hamburg.de/bsha/document/jlr-MedienStVtrHArahmen

sure that AI technology does not remain a black box, in particular in critical social domains such as health, banking, and housing (but not the media), fostering this way existing discrimination in AI algorithms.

3.3.1 Thematic domains

The thematic analysis about news and journalism is extremely limited in the case of France because media and journalism play a secondary role in the report. News media are, for instance, mentioned in the report as a means to inform the audience and to explain AI technology:

> "A meaningful AI finally implies that AI should be explainable: explaining this technology to the public so as to demystify it - and the role of the media is vital from this point of view - but also explaining artificial intelligence by extending research into explicability itself. (…) More generally, there is a need for collective debate on the subject of this technology: the constant acceleration in the patterns of its deployment should not stand in the way of political discussions on the purpose and validity of our objectives."[34]

The report does not explicitly mention media literacy. Still, it recognizes the news media's role in (critically) observing and explaining new technologies. It is interesting that the report points out that the media covers an important role when it comes to AI, not only in terms of explaining the technology to the public, but also in relation to holding it accountable. The report specifically declares that the task of evaluating and auditing AI technology should not be confined to government agencies, but civil society has to play a significant role as well. Villani's team uses the case of Pro Publica, which has successfully carried out what is called algorithmic accountability reporting (Diakopoulos, 2014):

> "As a guide, Propublica, the benchmark investigative media outlet for digital liberty which is financed by the Soros Foundation to the tune of $20m, has at its disposal five highly qualified full-time experts, developers at technology firms and/or post-doctorate students at the best universities, development support teams and a wide range of academic support. It would be difficult to locate similar resources elsewhere amongst French associations or in journalism, especially in the field of machine learning."[35]

As a consequence of the missing skills and expertise, also in the specifically mentioned journalistic field in France, the report suggests improving the communication between the

[34] See https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf page 7.
[35] See https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf page 118.

authorities, research institutions, and civil society. However, the report also points out that algorithmic accountability reporting is a complex endeavor, given that access to data is frequently challenging to obtain as data are proprietary. The proposed solution is to boost scientific, engineering and legal projects that analyze and investigate algorithms. Still, journalism is not mentioned in this regard - even if the report itself makes the case of organizations like Propublica again.

3.3.2 Risks and opportunities

The risks and opportunities analyzed in the report are not explicitly linked to media or journalism. The report asserts that AI creates many opportunities especially for value creation, but also for the development of societies and individuals. Nevertheless, implementing AI technology must benefit everyone and not increase the already existing discriminations and divides in society. Hence, the report addresses issues such as parity, diversity, gender equality and digital technology education. As stated on page 133, "An inclusive policy for AI must therefore incorporate a dual objective. First, to ensure that the development of AI technology does not cause an increase in social and economic inequality." Earlier, the report also proposes concrete opportunities for the beneficial use of data in the public interest, but the areas mentioned are health, transport, and the environment - media does not appear.

On the other hand, the risks concerning AI systems' application and employment are multiple: biases generated by the lack of diversity in programing design, and data analysis and the resulting interpretations. Other specific risks mentioned are discrimination, algorithms as black boxes, the risk of power accumulation of tech-enterprises that already hold enormous amounts of data on users, and the issue of the *perceived* risk, that is, resistance of actors or groups to adopt solutions that are considered, sometimes wrongly, to be too risky.[36]

3.3.3 Regulatory challenges

Together with Germany and Finland, France adopts a regulatory approach at a national and a European level. On a national level, the report shows that the current legislation does not seem to be consistent with the logics of AI systems, in particular with regard to the use of data, and the design of AI-driven systems.

When it comes to the use of data, France is still relying on its Data Protection Act dating back to 1978. It presents various blind spots because legislation relating to data protection only regulates artificial intelligence algorithms "inasmuch as they are based on personal data and/or their results apply directly to individuals". While this principle may be sufficient for some cases, many purposes escape this legislation, especially when algorithms have a significant impact on *groups* of individuals through statistical aggregates that might trigger discriminatory consequences or other forms of dysfunctional outcomes that do not cause harm to an individual user.

[36] See https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf page 33.

In addition, AI also represents an issue with its design because discriminations and cognitive biases are built into the code. Therefore, the legal framework needs to be updated regarding both the design as well as the data being used and produced:

> "It is therefore essential that legislation and ethics control the performance of AI systems. Since we are currently unable to guarantee a priori the performance of a machine learning system (the formal certification of machine learning is still currently a subject of research), compliance with this requirement necessitates the development of procedures, tools and methods which will allow us to audit these systems in order to evaluate their conformity to our legal and ethical frameworks. This is also vital in case of litigation between different parties who are objecting to decisions taken by AI systems."

The development of specific ethical guidelines represents one of the core recommendations of the Mission Villani. The report highlights, in particular, the importance of values such as accountability and explainability: accountability is defined as the need to keep organizations that deploy machine learning systems accountable for the caused damages. (Model) explainability means that output or a decision taken by an algorithm can be understood by a human. Accountability is seen as a central value given that the report understands it as a necessary precondition for its social acceptance. Accountability is defined as a crucial element, in particular when it comes to sensitive areas of life such as health, employment, justice, or else - but news and journalism are once more not mentioned.

The report also suggests creating a national advisory committee on ethics for digital technology and artificial intelligence to develop ethical guidelines for the design and use of AI technology. On top of that, it stresses the importance of teaching AI ethics - and the social sciences in general - on different educational levels to educate the public about the impact of these socio-technical systems.

Earlier on, the ethical issues raised by algorithms and AI have already been discussed in a paper published by the French data protection authority in the wake of a public debate that was part of the ethical discussion assignment set by the French Digital Republic Bill.[37] The public debate raised several ethical issues such as AI as a threat to autonomy, the potential risks of bias, discrimination, and exclusion, the collection, and retention of personal data, as well as the hybridization between humans and machines. As possible answers to all these issues, the report stresses the strengthening of specific principles such as fairness, the need for auditing, and continued vigilance regarding the unstable and unpredictable nature of machine learning algorithms.

In a recent statement, the French Conseil d'Etat - a governmental body that acts as a legal advisor to the executive - built on both the report by the French data protection authority as well as the Mission Villani, recommending "the implementation of a resolutely proactive

[37] https://www.cnil.fr/sites/default/files/atoms/files/cnil_rapport_ai_gb_web.pdf

artificial intelligence policy, to serve the general interest and public efficiency."[38] It explained that the use of AI in public services in France must adhere to seven principles:

> "France must anticipate the adoption of a regulatory framework, particularly on a European level, through the rapid implementation of pragmatic guidelines for the step-by-step deployment of artificial intelligence in public services, in a clear-sighted and vigilant way, to better address the needs of French citizens. Trustworthy public artificial intelligence based on seven principles: the primacy of humans, efficiency, equity and non-discrimination, transparency, safety (cybersecurity), environmental sustainability and strategic independence."

The Conseil d'Etat's statement also picked up policy recommendations from the earlier reports regarding auditing, recommending that the national data protection authority (CNIL) becomes the national control authority responsible for regulating AI systems.

3.4 Finland

Finland was one of the first countries in Europe to launch a national artificial intelligence program in May 2017, becoming a forerunner in the creation of fair, consumer-oriented principles related to the use of AI technology. In 2020, the Ministry of Justice was investigating whether automated decision-making meets the requirements of the Constitution as well as the data protection legislation of the European Union. Grounded on the assessment, the report concludes that automated decision-making should only be applied to situations where a decision can be mechanically derived from known facts without room for interpretation. Overall, the Finnish government has declared that the development and deployment of AI technology raise uncertainties about the application of the current legislation, which is why there is a need for legislative and regulatory reform. The report "Leading the way into the age of artificial intelligence. Final report of Finland's Artificial Intelligence Programme 2019", one of the main documents that deal with Finland's AI strategy, includes therefore several key actions on how to harness AI responsibly in Finland. The main goals are the need of an updated legislation for AI, fostering AI literacy among citizens, and the development of ethical guidelines for the responsible use of AI. The public sector is one of the main areas where discussions about a human-centric use of AI and the implementation of ethical principles are being discussed through the so called AuroraAI project. Instead, similarly to France, Finland does not prioritize news media and journalism as relevant sector in its national AI strategy.

[38] https://www.conseil-etat.fr/en/news/turning-to-artificial-intelligence-for-better-public-service

3.4.1 Thematic domains

News and journalism do not play a central role in policy documents. Instead, other sectors such as public administration, mobility and transportation, health, environment, energy, and education are all part of the national AI strategy. Media are not mentioned specifically in the documents, only in the sense that AI ethics is a topic that is regularly covered by news media. In this sense, the only media-related theme that arises from the documents is AI literacy, not only related to news coverage, but also in terms of a continuous learning project that should foster knowledge about ethical issues of AI technology among Finnish citizens and allow for their participation in the public discussions:

> "AI ethics has been a rising theme in public debate as well. The issue has been discussed in the media, literature and events touching on the subject, and it has become clear that the ethical aspects of AI are always included in the discussion about the future of AI as well. The themes political parties have chosen for their parliamentary election campaigns also touch on AI and its impacts. However, the debate is very expert-centric; the civil society should be allowed to participate in the discussion about the ethics of AI and its societal impacts in an increasing extent."[39]

3.4.2 Risks and opportunities

The opportunities mentioned in the report mainly revolve around three specific aspects: first, automation can reduce the need for workforce; second, AI can help in the collection of tacit knowledge; and third, new technology like AI may attract more young people. In a media-related context, especially the first argument of reducing the workforce could also be perceived as a risk given that some studies in the past have demonstrated that journalists were concerned about being laid off due to technological innovations such as AI (van Dalen 2012; Carlsen, 2015). On the other hand, risks such as biases can result from the lack of diversity in programming design, but also from data analysis. Another issue are the blind spots present in the existing legislation concerning AI and its consequences. While AI is expected to offer opportunities for the analysis and use of information, it poses novel challenges for information policy, in particular when it comes to the question of how to build trust in AI-driven systems.

3.4.2 Regulatory challenges

Like other countries in the sample, Finland also opts for a combined approach: on the one hand, it wants to adapt its regulatory framework to the peculiarities of AI systems, on the other hand, it has launched a discussion around ethical principles for AI. Regarding the former, the government wants to create strict rules to foster trust in technology. But rather than act

[39]https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161688/41_19_Leading%20the%20way%20into%20the%20age%20of%20artificial%20intelligence.pdf

exclusively through statutory regulation, the government encourages ecosystems and sectors to self-regulation and sharing of good practices.

> "Uncertainty about the application of legislation and ethical principles to the development and deployment of AI slows down the use of AI in Finland. With clear rules, we create a predictable operating environment that supports the trust of citizens on technology and serves as a basis of AI-related growth. In other words, AI ethics generates economic growth by making the environment easier to anticipate and by providing new business opportunities. The AI ethics must not be seen as a factor posing limitations on the activities only, but also as a factor that creates something new, and provides increasing opportunities."

At the same time, the government states that it should be avoided that ethics becomes a counterforce for innovation. Instead, ethics should serve as a building block for trust, in particular through elements such as transparency, accountability, and reliability. Worldwide, ethical principles and guidelines for the design, implementation and use of AI technology have been recognized as being crucial. In Europe, Finland, together with France, has declared ethics as one of the highest priorities of their national AI programs since the value-driven design of these systems, and the respect for human rights and democracy in a society, is a precondition for responsible use of the technology. It is even recommended to install a national council on the ethics of technology, a multidisciplinary national group of experts, that should carry out an ethical analysis of the impacts of AI, and create the operating conditions for the responsible use of AI-systems. The report itself states that ethics and data policies are present (or at least discussed) in many sectors, but when it comes to the use of artificial intelligence in public services, the public debate revolving around ethics and the responsible use of these technologies takes place less often.

4. Organizational strategies

In this chapter, we look at the governance approaches in four different public service media: SRG SSR, Bayerischer Rundfunk, France Télévisions, and Yle. At this level, we carried out in-depth interviews with those individuals responsible for the governance of AI technologies in the news media, and we also analyzed - if present - the specific code of ethics that deal with the design, implementation, and use of AI technologies.

4.1 SRG SSR[40]

Within SRG SSR, AI is mainly used in four different areas: image and video processing, speech processing, conversation and interaction, and personalization. Overall, the company focuses on the question of how AI can be used to help journalists in their daily work and routines. At the same time, the output that the AI tools produce must always be controlled by humans (even if, for example, the algorithm learns on its own, the final output needs to be controlled by a person). This is not up to discussion because it is in the interest of the public service that everything produced and distributed by SRG SSR is therefore perceived by the public as trustworthy. Trustworthiness emerges therefore as the guiding principle of any decision about the use of artificial intelligence and its risks within the company. This is because it is important to maintain the trust of the audience to continue to be followed as a public service:

> "You can always sort of summarize it with the concept of trustworthiness and we have to be accurate to be trustworthy. If you are not accurate, there's the risk that people don't trust us. (…) So it always comes down to trustworthiness. That's the overall thing."

The interview made it clear that concerning the development and use of AI tools, four main principles that guide the process:

a) *Specific norms («Leitplanken»)*
b) *Responsibility*
c) *Intellectual property*
d) *Specific goals*.

When it comes to the specific norms or "*Leitplanken*", SRG SSR adopts a human-centric perspective. The human being, be it as a journalists or a member of the audience, is always at the center of the process. This also means that no automated content is immediately published or adopted without being checked first. The final control is always left to a human being, as this is one method of ensuring the trustworthiness of the used AI tools.

> "The AI is always under human control and so this is the main principle. We are in charge of the security and transparency of the AI tools working in the background. And of course, this is very public service oriented."

[40] In the case of the Swiss public service media, we interviewed SRG SSR's Chief Data Officer Dr Christian Vogg. In this role, he takes care of data governance and data policy issues at the public service, trying also to harmonize the metadata workflows across all vectors. Vogg also initiated SRF's AI team and implemented the first AI-supported applications.

In terms of *responsibility*, the significant concepts are transparency, security, accountability, and protection against bias and discrimination. First of all, journalists must comply with the Federal Act on Radio and Television (RTVA) when creating and disseminating content. This is the case whether the news is created or disseminated using artificial intelligence or not. In terms of transparency, the principle is not only relevant in terms of the application of AI-driven technology, but it can also be found in SRF's journalistic guidelines[41] as well as in the quality assurance policy[42]. The guidelines clearly state that journalists need to make it transparent if the content is somehow manipulated with AI technology, unless it is not clear to the consumer, e.g. when avatars are being used. The transparency rule applies both to internal use as well as to the public:

> "In some cases, we will write: OK, please be careful. This is machine-translated content for example. So even in our own archive where we use automatic transcription, there is a note for the journalist who will see that this is machine transcripted material."

Another important element regarding responsibility concerns the human in the loop: even when the algorithm learns on its own, accountability and responsibility must be attributed to a human being in the newsroom.

Thirdly, when it comes to the customization of content, that is the algorithmic filtering, distribution, and personalization of information, the filter effect is countered by editorially following these processes. It also emerges that transparency is relevant to personalization. The risk to be avoided is offering content that leads audiences to remain in information bubbles. Therefore, SRG SSR tries to offer a varied and universal offering, with *some* content being personalized.

> "That's a big issue because we have a lot of content and of course, you want to keep your users as long as possible on your platform. And the idea is that if you personalize it somehow, they will stay longer, but the risk is that there are getting into a bubble. If you are only interested in football, and maybe in your dog or your cat, the machine would learn that and you would just get more of the same, with here and there something new."

One way to work around the problem of information bubbles is to apply a serendipitous discovery, that is personalize some content, but keep for instance the most important and breaking news in the information offered, or add something that is not in line with the user's preferences.

[41] https://publizistische-leitlinien.srf.ch/leitlinie/transparenz-und-umgang-mit-quellen/transparenz-bei-inszenierungen-und-beim-einsatz-von-ki/?hilite=künstliche
[42] https://www.srgssr.ch/en/what-we-do/quality/quality-assurance

> “It's very easy that some content topics you cannot kick out or the algorithm will sort of avoid kicking out everything.” “You could skip a lot of things, but some major things. The major news or so in short, in the shorter version, of course, you cannot. You could not skip. And this was to avoid the bubble thing.”

The interview highlights how, when it comes to content personalization, the topics of universality and transparency in the use of AI-based tools are currently under discussion at the European level and that they are closely followed by the PSM.

> “The bigger round table discussion with colleagues from the European Commission, with members of Parliament, (…) and other big players, and it was all about basically to influence the making of the AI Act (…) So they are now in the process in Brussels to come up with an AI regulation. And the aim is from our side, from the creative industry and journalism, to not get too many restrictions because, well, for a public service broadcaster, it is in our interest not to play around with these things, to act responsibly with these things. We would not go into a field that is too risky. As I said, trustworthiness is the biggest thing and a very precious good for us.”

Intellectual property concerns the protection of tools with licenses or patents:

> “We safeguard our content with licenses. (…) AI does not have any inventing power, this is done by humans.”

The pillar called “goal” is focused on the promotion of trust in AI among the audience. This is a particular goal of the public service media, trying to make the audience aware of the risks and benefits that artificial intelligence can generate. Concerning this point, the three main risks identified by SRG SSR are accuracy (e.g., automated translations of text into speech), discrimination (e.g., maintaining a certain universality in production, distribution, or offer), and legal issues. For example, SRG SSR will not use avatars that replace journalists regularly, because users might lose trust in the PSM. This technology will only be used for routine tasks such as traffic information (e.g., the voice reading traffic news).

Overall, trustworthiness emerges as the central point guiding decisions regarding AI. There is currently no desire to have too much regulation on any level because it might hamper creativity and innovativeness.

> “It's in our interest that the things are correct. If the media are not correct, the audience will blame them. So it's always in our interest to be accurate,

> and this is also true for commercial media. It's in their interest that things are correct. And as you know, if you lose trust, it's a very long process to rebuild it. So we are very careful about that."

However, besides the four pillars regarding AI technology, there is no specific and institutionalized process to follow when it comes to the design, use and implementation of tools. The interviewee declared that the use cases might simply be too different, which is why the PSM pragmatically tackles ethical issues. While the four pillars offer a general framework for checks and balances, a more institutionalized process regarding checks on ethical issues such as transparency, responsibility, and accountability might be useful in the future because trustworthiness is perceived as a central tenet of the public service medium.

Regarding the collaboration of journalists in the development of AI tools, they are usually involved in the process through workshops, especially to find out what kind of pains they face every day and whether AI can help solve them.

> "It's a process with a lot of steps. So and the first step is indeed to gather the information internally**,** and for example then do a workshop or a brainstorming. For instance, if journalists are looking at different databases, they need some material for their daily reporting. So for many years, one goal was to develop a system with a search bar for all in-house databases."

However, several people are involved in gathering information and brainstorming about the implementation and integration of AI, not only journalists but also audience members, radio or video experts, etc. Of course, internal experts from the AI team are involved, but so are experts from outside the company.

> "We work together with the scientists in the field of media technology/AI (e.g. ETH in Zürich) and there is some money every year to be spent on projects. And we do every year a pitching and decide what kind of projects to implement."

On top of that, in late 2020, SRG SSR created a National Coordination Group for Artificial Intelligence. The Coordination Group includes experts from all the language regions. Each member is an expert in one of the areas of video, audio, text, and recommendation. The group was created at the request of the Digital Board to track AI projects across the company and provide technical advice to the Digital Board.

4.2 Bayerischer Rundfunk[43]

In the case of the Bayerischer Rundfunk (BR), the main areas where AI is used are during news production (such as the production of texts or graphics), the management of large amounts of data (such as in-house archives, for instance regarding the automated tagging of content), the automated transcription of audio to text, and social media monitoring. The overall philosophy of the AI + Automation Lab at BR is not to use technology such as AI or algorithms for the sake of being used, but it all comes down to the usefulness of the results. This approach also stems from the particular rationale of the Lab, which is not only a laboratory that develops technological tools, but also acts as a data-driven journalistic team that is highly specialized in investigative data journalism. In other words, the need for a specific tool arises from a specific investigation or a need connected to a specific story. And AI is but one area of development, but by far not the only one:

> "We, as the 'AI + Automation Lab' have two main areas in which we use AI: automated format development and the other is investigative reporting with the help of algorithmic methods. In this second area, we use artificial intelligence, but we also use many other methods of automation."

Similarly to what has been said above, AI is mainly used to make life easier for journalists. The technology should simplify specific tasks for journalists and therefore make the overall news production more efficient and less time-consuming. A good example where AI technology can be put to good use is searching for relevant information in a huge amount of data, both texts, and images:

> "In the area of news production, there are more opportunities for AI to automate work. For example, the automated production of data on COVID cases was completely automated, in the sense that we had an automated production of information in the form of graphs twice a day. This is an example of how to simplify work, combined with a useful service."

The use of AI and automation also entails risks. For example, when developing a new tool, it is necessary to develop a step-by-step process: first, the Lab and its collaborators must understand what kind of information the tool needs to have. Once the information and data sources are cleared, one needs to understand how the data is (correctly) processed, and what kind of output is created, and in what form. To be able to accompany the development process of AI technology, one has to create an organizational structure as well as a process that takes

[43] In the case of the Bayrischer Rundfunk, we interviewed the Head of the Automation + AI Lab and Co_lead of BR Data, Ulrike Koeppen. In this role, she heads the data journalism team at Bayerischer Rundfunk and, together with her colleagues in both teams, she works on data-driven journalistic products and research on algorithms. She spent a year as a Nieman Fellow at Harvard and MIT in 2019, researching interdisciplinary teams, investigating algorithms, and automation.

into account all the possible challenges and risks that might occur along the way of design - at least those predictable. In this regard, in late 2020, the BR adopted specific AI ethics guidelines on how new AI-driven technology should benefit both users and employees of the BR.[44] The code of ethics is based on the following 10 main guidelines: User benefit, Transparency and Discourse, Diversity and Regional focus, Conscious Data Culture, Responsible Personalization, Editorial Control, Agile Learning, Partnerships, Talent and Skill Acquisition, and Interdisciplinary Reflection. The code of ethics for automatization and AI was shared with other teams within the BR, in particular, to raise awareness about the topic of automation, but also to create a list of cases where artificial intelligence and automation can be applied. Moreover, the guidelines also serve to launch a discussion with people who are involved in AI to get their feedback.

> "We developed an AI strategy in interdisciplinary groups and shared this code of ethics. We described cases where AI and automation could be applied, we thus fairly quickly created a list and then published it. Published to give internal guidelines, for example, what needs to be done with automated content, but also because we wanted to create a discussion with other people dealing with the AI issue, which was still new at the time. This worked well; we received a lot of feedback about it. This was the main reason behind this decision."

About the issue of having a well-defined development process When it comes to transparency, the guidelines state:

> "We make plain for our users what technologies we use, what data we process, and which editorial teams or partners are responsible for it. When we encounter ethical challenges in our research and development, we make them a topic to raise awareness for such problems and make our learning process transparent." (AI Ethics Guidelines, Rule 2)

Transparency in the development process is crucial, not only to make all possible risks known to the involved parties, but also to maintain trust in the technology. Hence, when it comes to the development of a new tool, the lab always starts with a workshop together with the editorial staff to understand the journalistic needs, and to pin down the task that may be automated. The Lab thus follows an early onboarding strategy to take into account the journalists' perspectives. The lab then collaborates with the editorial staff to better understand the needs of automation, and to finalize the desired product. As a result, the overall procedure becomes transparent to journalists because they collaborate with the lab team from the start.

[44] https://www.br.de/extra/ai-automation-lab-english/ai-ethics100.html

> "For example, when it comes to text automation, depending on the field of interest, we interact closely with the expert in the field. To use the specific case of text automation in basketball, from the beginning we worked together with the sports journalist, who is an expert in the field of basketball. The expert then gives feedback on the text created through automation. He also takes into account all the steps done so far by us in developing the tool, and we agree together on how it is best to further develop the steps that the automation should follow. The journalist participates in each step."

Cooperation with journalists is vital to receive feedback, and the Lab puts a lot of effort into convincing them to get involved. However, Koeppen admits that it is often difficult to involve journalists in a process of co-design because they already have so much daily work. Nevertheless, by creating communities of practice, where developers and journalists can exchange their views and concerns, for example through workshops and open discussions, the Lab tries to make for an engaging environment. However, this inclusive strategy entails the risk that the implementation of a project will take more time because one has to wait for the journalists' feedback.

A thorough process of checks and balances is seen as vital, especially when it comes to the use and management of data. In rule number 4 of the AI Ethics Guidelines, the Lab declares that

> "We require solid information about their data sources from our vendors: What data was used to train the model? Correspondingly, we strive for integrity and quality of training data in all in-house development, especially to prevent algorithmic bias in the data and render visible the diversity of society.
>
> We continually raise awareness amongst our employees for the value of data and the importance of well-kept metadata. For only reliable data can produce reliable AI applications. A conscious data culture is vital to our day-to-day work and an important leadership task to future-proof public service media.
>
> We collect as little data as possible (data avoidance) and as much data as necessary (data economy) to fulfill our democratic mandate. We continue to uphold high data security standards and raise awareness for the responsible storage, processing and deletion of data, especially when it concerns personal data. We design the user experience of our media services with data sovereignty for the user in mind." (AI Ethics Guidelines, Rule 4)

Besides transparency and developing a conscious data culture, the biggest issue when it comes to the use of AI and algorithms concerns personalization. Also in the case of the BR, Koeppen stresses that personalization and news recommenders can be helpful, but they must be used without the risk of producing filter bubbles since the mission of the public service broadcaster is to provide universal access to content and the widest possible range of information. Therefore, whenever AI or automation is used to personalize content, this public service goal must always be kept in mind.

> "No tool we develop can discriminate; this is also true for recommendations for example. We cannot create tools that exclude some of our users. (…) Our mission is to inform people and we need to apply (…) our mission to digital as well, and to the use of AI or automation."

This is also reflected in the guidelines:

> "Personalization can strengthen the information and entertainment value of our media services, so long as it does not undermine societal diversity and prevents unintended filter bubble effects. Hence, we use data-driven analytics as assistive tools for editorial decision-making. And in order to develop public service minded recommendation engines, we actively collaborate with other European media services through EBU." (AI Ethics Guidelines, Rule 5).

Koeppen points out that the recommendations/personalization are part of another department within the BR, the Lab mainly deals with projects and tools concerning news production. However, the Lab is also involved in developing tools that can then be used in the department that deals with recommendations as well. In other words: The Lab engages in a lot of collaborations, frequently to offer guidance in terms of how data ought to be used, and how to personalize content without going against fundamental values such as (regional) diversity or universality.

> "Newsrooms come to us with specific requests, and we try to help them. For example, the idea of automating COVID content helped journalists who already had a huge amount of daily data to handle. But we do that also in other fields such as sports or economics."

However, regulation does not seem to be the right answer to all AI-related problems. A governance framework cannot be too specific since AI-driven tools often radically diverge

from one another, especially if they are used in different phases of the news cycle. Ethical issues often come down to the specific use case:

> "It depends on where the tools or applications are developed, for example, tools that have to do with transcription are not an area that necessarily needs to be regulated. On the other hand, when it comes to, for example, filter bubble issues, here we think it is better to regulate, but it is a very individual decision and not generalizable. It is possible to create ethical guidelines, as we did, but in many cases, it depends on the individual use case."

Overall, the laboratory's mission is related to the question of how technology can support the mission of a public service medium. While different use cases may entail different ethical challenges, the BR as well makes a statement for editorial control:

> "While the prevalence of data and automation introduces new forms of journalism, the editorial responsibility remains with the editorial units. The principle of editorial checks continues to be mandatory, even with automated content. But its implementation changes: the check of every individual piece of content is replaced by a plausibility check of causal structures in the data and a rigorous integrity examination of the data source." (AI Ethics Guidelines, Rule 6)

4.3 France Télévisions[45]

In 2019, France Télévisions established a new unit within its organization with the intent to boost the development of AI-driven tools. This new unit was named "Data and Artificial Intelligence (DaAI)" and its goal was to modernize and rethink television broadcasting in the digital era. This means testing AI solutions and producing proofs of concepts that might be implemented in France Télévisions' workflows at a later stage. The unit had an immediate impact given that in 2020 it was awarded the "Technology & Innovation Award" 2020 offered by the European Broadcasting Union EBU for its system used in the analysis of political debates. In April 2020, France Télévisions also launched a European-wide tender for the future collaboration on AI technology for the public service media. In the end, the public service chose Capgemini as an external partner that would be in charge of the development of new projects, together with the DaAI unit and the French startup Perfect Memory, in the area of data and AI.[46]

[45] In the case of France Télévisions, we were unable to interview someone from the Data and Artificial Intelligence unit within the company. Requests for interviews were not answered.

[46] https://www.francetvlab.fr/en/posts/france-televisions-is-taking-its-technological-transformation-forward-with-capgemini-and-perfect-memory

When it comes to the issue of checks and balances related to data-driven technologies, most documents that are accessible online offer a general ethical framework such as the Charte d'éthique[47] or the Charte des antennes[48]. However, the Charte d'éthique points out the importance of transparency, in particular when it comes to internal controls and audits - but AI technology or algorithms are not specifically mentioned. Instead, when it comes to data, France Télévisions mainly refers to the European General Data Protection Regulation without specifying topics such as AI or algorithms.

Besides these general self-regulatory documents, no specific policies or guidelines could be identified regarding the use of AI technology within France Télévisions.

4.4 Yle[49]

AI is mainly used in three areas at YLE: editorial news production, content creation, and distribution. Especially in this last area, YLE adopts tools for news recommendation and personalization. Scalability is seen as the main risk in this use of AI, so the systems are implemented cautiously, constantly reviewed, and used in restricted circumstances (news recommenders for instance are only implemented to some extent and not all content). To make sure that AI-driven tools are being designed and used responsibly within Yle there needs to be a so called "period of culture" which is explained as a moment of thorough review that is built within the development culture (it ranges from reviewing code to reviewing output, constantly evaluating the model). It also means acting in good faith, for instance by guaranteeing the right to speak to all involved parties, making sure that algorithms respect diversity, and that Yle participates in the societal discourse about AI.

When it comes to the use of AI in news production and its output, journalistic values as stated in the Ethical Guidelines for the Production of Programs and Content[50] or the Journalistic Guidelines of the Council for Mass Media in Finland[51] are used as the ethical framework. In different documents, Yle refers for instance to the concept of transparency. Concerning the development process, different documents are crucial. For instance, Yle's Code of conduct states: "We promote the transparency of our operations and provide details on the background to our decisions to the public."[52] But it is not only about transparency, it is also about the management of data as well as the use of (new) technology:

> "We promote equality, non-discrimination and fairness. (…) We use technology, digital solutions and collected data in accordance with Yle's values and pay attention to the ethical impacts of our operations during the

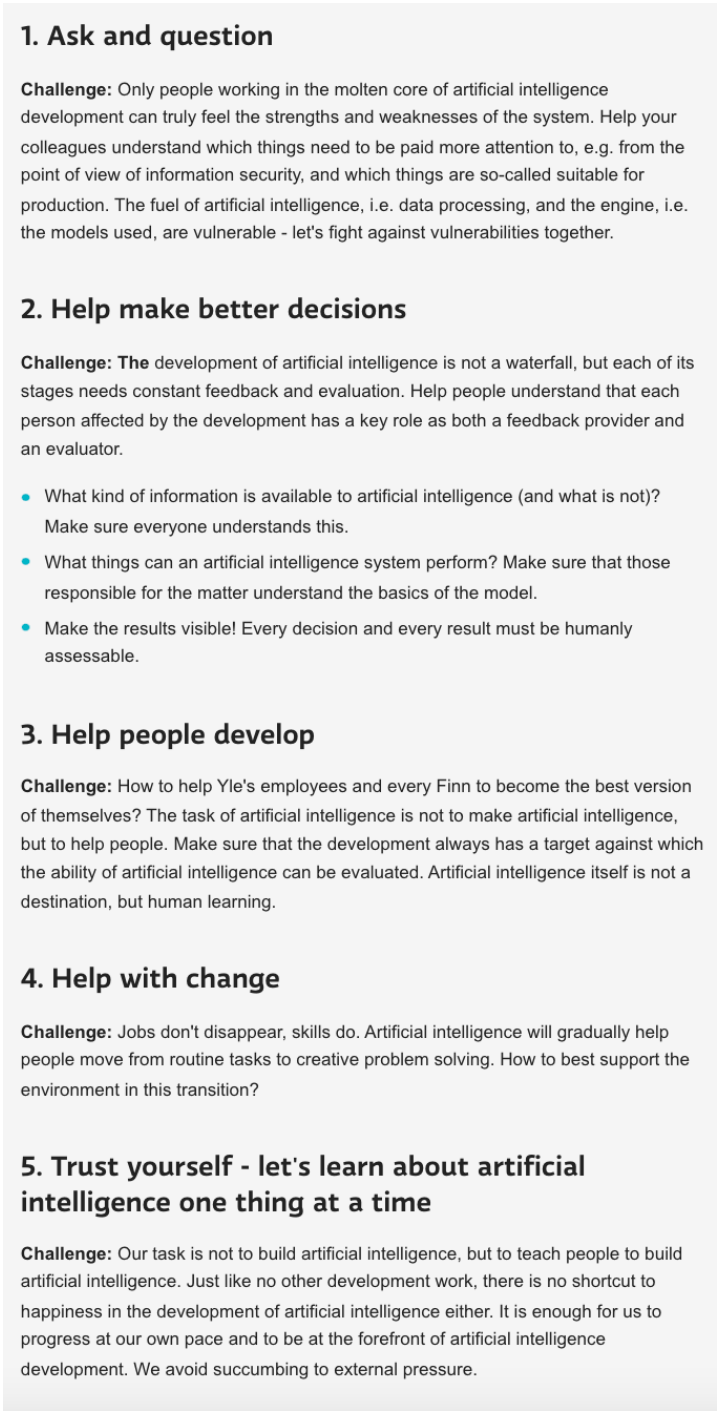
[47] https://www.francetelevisions.fr/groupe/nos-engagements/charte-dethique-47
[48] https://www.francetelevisions.fr/groupe/nos-engagements/charte-des-antennes-93
[49] In the case of Yle, we interviewed the Head Of Customer Experience at Yle, Jaakko Lempinen. In this role, he heads the design of AI inititatives across different platforms. YLE has been a pioneer among PSM to use AI and automation on a broad scale across the whole news cycle and different content formats.
[50] https://yle.fi/aihe/s/ethical-guidelines-production-programmes-and-content
[51] https://jsn.fi/en/council-for-mass-media/
[52] https://yle.fi/aihe/s/yle-code-conduct

> procurement and use of services and systems and at the end of their useful life. We anticipate the ethical risks associated with technology choices and the use of data." (Yle, Code of Conduct)

When it comes to the specific design processes of AI and automation, Yle has established an ethical roadmap that guides employees through the whole development process. These "Ethical rules of the game for artificial intelligence development" not only support the development process of AI, but they offer practical advice developers can rely on when facing difficult questions.[53]

[53] https://yle.fi/aihe/artikkeli/2019/01/23/jaakko-lempinen-auta-ihmisia-kehittymaan-ja-4-muuta-tekoalykehityksen-eettista

Figure 3 - Yle Ethical rules of the game for artificial intelligence development



1. Ask and question

Challenge: Only people working in the molten core of artificial intelligence development can truly feel the strengths and weaknesses of the system. Help your colleagues understand which things need to be paid more attention to, e.g. from the point of view of information security, and which things are so-called suitable for production. The fuel of artificial intelligence, i.e. data processing, and the engine, i.e. the models used, are vulnerable - let's fight against vulnerabilities together.

2. Help make better decisions

Challenge: The development of artificial intelligence is not a waterfall, but each of its stages needs constant feedback and evaluation. Help people understand that each person affected by the development has a key role as both a feedback provider and an evaluator.

- What kind of information is available to artificial intelligence (and what is not)? Make sure everyone understands this.
- What things can an artificial intelligence system perform? Make sure that those responsible for the matter understand the basics of the model.
- Make the results visible! Every decision and every result must be humanly assessable.

3. Help people develop

Challenge: How to help Yle's employees and every Finn to become the best version of themselves? The task of artificial intelligence is not to make artificial intelligence, but to help people. Make sure that the development always has a target against which the ability of artificial intelligence can be evaluated. Artificial intelligence itself is not a destination, but human learning.

4. Help with change

Challenge: Jobs don't disappear, skills do. Artificial intelligence will gradually help people move from routine tasks to creative problem solving. How to best support the environment in this transition?

5. Trust yourself - let's learn about artificial intelligence one thing at a time

Challenge: Our task is not to build artificial intelligence, but to teach people to build artificial intelligence. Just like no other development work, there is no shortcut to happiness in the development of artificial intelligence either. It is enough for us to progress at our own pace and to be at the forefront of artificial intelligence development. We avoid succumbing to external pressure.

The guidelines for the developers make it clear that the design process of AI technology cannot be limited to the domain of data scientists or engineers. They need to take into account that AI systems are socio-technical systems, which is why they should not only help people understand the effects of AI systems, but also listen to people and their concerns: “Artificial intelligence itself is not a destination, but human learning.” Nevertheless, when it comes to the development of AI tools, there are no institutionalized “checks and balances” and no

specific process to follow, which is also due to the different use cases. Tools for news production (e.g. automated translation) differ from those adopted for personalization in terms of risk, impact on the audience, and reach.

Especially when it comes to news recommendations, Yle adopts different strategies through which news content is adapted to the users' preferences. They not only take into account previously viewed content, but they also let users actively select the topics they would like to have more content on, and in what form. However, Yle does not recommend all content to its users in all situations. The recommendation can be limited in certain situations and to certain target groups either for technical, journalistic, or ethical reasons. For instance, the editorial selection made by the news department always overrides the choices made by the algorithm. For example, in the case of a major news event, the editor may decide that a topic is so important that it must be shown to all users.[54]

In the area of news recommendation and personalization, Lempinen acknowledged that sometimes there could be a clash with the concepts of universality and diversity. But at the same time, it comes down to the way users access and consume news through the PSM:

> "If you watch us on TV, you have to be in front of the TV at half past eight every day. It's your choice and this I what you get. But if you want to use us in the digital media, you have to modify it by yourself so that it works to your daily routines and I mean it doesn't bother you, but it helps you."

In other words, when it comes to news recommendation, guaranteeing universal access to the content is of primary importance, and personalization is seen as an additional service to adapt the content to the users' preferences to some extent.

Regarding the collaboration of journalists in the development of AI tools, they are more involved in the insights that AI tools can offer rather than in the development stage of the tools themselves:

> "There's a project where we get data from social media, and we try to find some newsworthy phenomena. If something interesting is found in the data, the journalistic team jumps in to evaluate whether it is news or not. (…) They don't take part in how we get the data or how we get there. But they're more interested in the insights."

Communication among different teams is key to developing common projects. Within newsrooms, especially in larger organizations such as public service media, individuals with a specific interest in technology, data, or AI are needed to explain to fellow journalists what the technology can do:

[54] https://yle.fi/aihe/s/yleisradio/ylen-palvelujen-personointi-ja-uutisautomaatio

> *"I see this especially in the journalistic process. When you have a change of behavior or routines, you need a lot of faith, and you need to build up trust. (…) you need people working on both teams. In this way, developers are trusted by the editorial people, and the other way around, they talk the same language. You don't need necessarily deep algorithm understanding. Instead, it is important to understand what options you have and what is best for you. What are the risks involved in the system?"*

Overall, Yle adopts a strategy of self-regulation when it comes to the development of AI technology, with guidelines that are related more strongly to the design and machine learning side rather than to the journalistic one. On the journalistic side, the ethical framework relies on traditional ethical guidelines and principles such as the code of ethics of institutions of media self-regulation like the Council for Mass Media in Finland.

4.5 BBC[55]

Similarly to the AI + Automation Lab, the BBC has developed Machine Learning Engine Principles that include six guiding principles and a self-audit checklist for ML teams such as engineers, data scientists, and product managers.[56]

> "When designing AI & ML products and services, we believe it is important to build thoughtfully and inclusively so that algorithms work the way we intend them to, serve all users, and do not have negative impacts. Worryingly, we have seen AI systems unintentionally discriminate by replicating biases in datasets, and amplifying misinformation or extreme content in algorithmic feeds. The BBC needs to avoid these pitfalls and build AI & ML systems that our audiences and our staff can both trust. We also need to build on BBC Research & Development's work on machine learning in the public interest to ensure our unique public service values such as impartiality and universality are reflected in the technology we build and use."[57]

These principles are based on public service values and they are designed to serve as a practical guideline for developers within the BBC. The checklist within the principles correspond to each development stage when it comes to machine learning projects. The

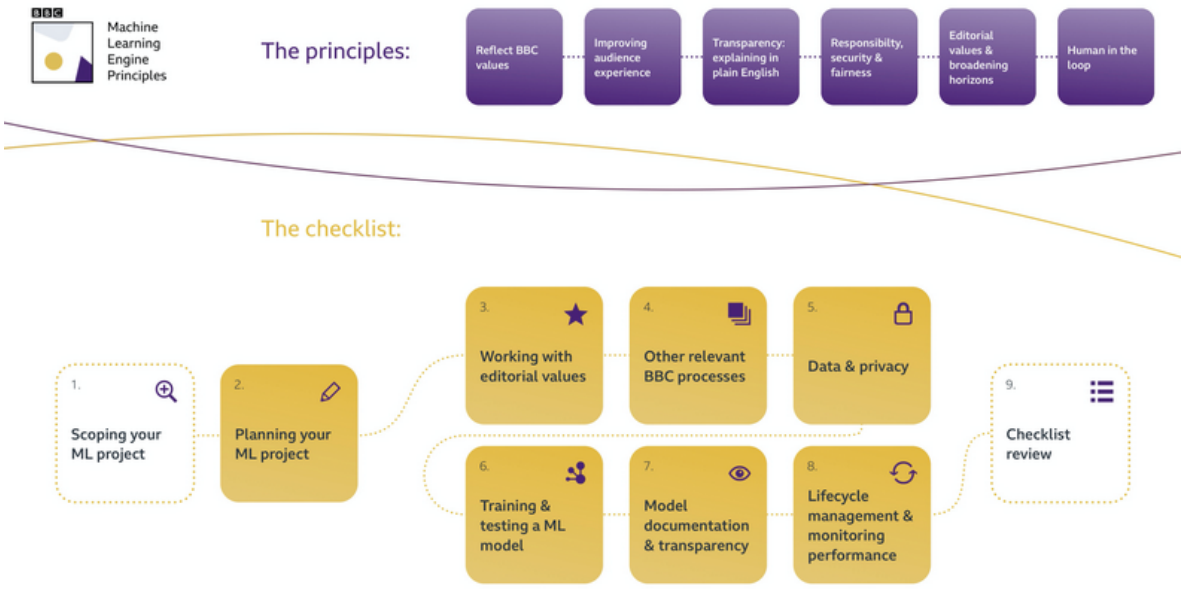
[55] The material regarding the BBC comes from an additional research project supported by the Tow Center for Digital Journalism at Columbia University, New York, and was part of a Knight News Innovation Fellowship. The chapter on the BBC was added because the governance framework regarding machine learning is one of the most developed to date.

[56] https://downloads.bbc.co.uk/rd/pubs/MLEP_Doc_2.1.pdf

[57] https://www.bbc.co.uk/rd/publications/responsible-ai-at-the-bbc-our-machine-learning-engine-principles

principles contain a list of specific questions, developed by an inter-disciplinary group composed of staff from across data science, engineering, research & development, policy, legal, and product, and intended for teams to work through. The goal of these principles is not to serve as a pure review tool for the (ethical) quality of an algorithm, but the intention is "to make thinking happen" and to serve as a "self-audit tool" development teams can use. The principles focus on three elements: values, audiences, and responsibility. In terms of values, machine learning engines must uphold the BBC's core values such as trust, putting audiences at the heart of everything they do, respecting diversity, and delivering high-quality content. The audience part concerns the fact that the BBC respects the data it uses for machine learning purposes. And the audience has a right to know what kind of data the BBC is using, and what for. This also means transparency regarding the use of data, explaining "in plain English, what data we collect and how this is being used, for example in personalization and recommendations." Lastly, responsibility means that machine learning must be in line with the BBC's editorial values, that the BBC takes responsibility for the output of the engines, and that the company takes a human in the loop approach: "ML is an evolving set of technologies, where the BBC continues to innovate and experiment. Algorithms form only part of the content discovery process for our audiences, and sit alongside (human) editorial curation."

Figure 4 - The BBC's machine learning principles[58]



Taken together, the principles not only serve to develop machines in line with the core (editorial) values of the BBC, but also to generate trust in (the development of) AI-driven tools used in the news cycle. It raises the sensitivity of programmers to both issues regarding the

[58] Figure taken from https://www.bbc.co.uk/rd/publications/responsible-ai-at-the-bbc-our-machine-learning-engine-principles

editorial side, and also to issues regarding the audiences, in particular when it comes to questions of data management, privacy, as well as dysfunctional outcomes of algorithms in the area of news personalization and news recommenders. The principles can help avoid known pitfalls, and constantly remind developers to care about (editorial) values, but also to opt for different forms of co-design by including expertise from other teams such as HR, UX, audiences, or the newsroom itself.

5. Conclusions and policy recommendations

The study shows that the use of AI in news media and journalism has become pervasive, and therefore the question of AI governance is a pressing issue. On different regulatory levels - from the supranational level of the EU and the Council of Europe, to national strategies and regulatory initiatives, to organizational self-regulatory measures - AI is perceived as a technology that needs a new regulatory and ethical framework. While the EU's Digital Services Act has already established rules for a safer digital space, protecting fundamental rights of users, the proposed AI Act will tackle AI technology even more specifically, with potentially limiting impacts for news media as well. The EBU (2022) has already argued for less strict transparency rules due to diminishing user experience. This line of argumentation clashes to some extent with the fact that the relationship between AI-driven tools, users, and their data is not always transparent. This might require "rethinking how to respect users' rights to privacy, to form opinions and to non-discrimination " (Helberger et al., 2020). However, at the moment it is still difficult to foresee the impact that a risk-based approach such as the AI Act could have on news media and journalism, simply because news media and journalism are not often mentioned in the policy documents at the European level.

At the national level, there are some similarities between the strategies of the analyzed countries. All of the countries in the sample have a clear national AI strategy, in which AI governance plays a more or less central role. The three European countries Germany, France, and Finland mention the European Union as a central level where European-wide regulation needs to be developed. In this sense, many of the national inquiries into AI governance will also be channeled upwards to the supranational legislative debates. However, all EU countries converge on the fact that AI governance requires both amendments to current regulatory frameworks (for instance regarding fundamental rights, data protection rights, transparency, the control of these systems etc.) and specific ethical principles and guidelines for the design, use, and implementation of AI systems. However, also at the national level, news media and journalism rarely play a crucial role. If media are mentioned, in most cases the policy documents denote intermediaries such as social media platforms. At the national level, the current discussions very often go beyond statutory or co-regulation and identify the need for more self-regulation, in particular, because the use cases as well as the challenges and risks of AI technology may differ between industries.

Switzerland, unlike all other countries, has also analyzed the potential impact of AI technology in the news media industry. Most institutions such as Federal Media Commission suggest consolidating self-regulation regarding AI and the related ethical issues. Self-regulation should be strengthened both within news organizations that adopt AI technology, for instance

through ethical guidelines, but also in professional institutions of media self-regulation such as the press council. On top of that, Switzerland should continue to observe both international developments as well as the scientific debate revolving around the implications of AI in news and journalism. Overall, the challenges of AI in news and journalism do not seem to be of primary importance at the moment given that the general legal framework in Switzerland is seen as sufficiently elaborated to deal with novel AI challenges.

The PSM in this study have all adopted self-regulatory means regarding AI governance. Starting from the fundamental values of public service media enshrined in charters and licenses, most pillars, principles or guidelines offer practical guidance about how these core values can be translated into the development and use of AI technology. These principles have been developed to facilitate the use and design of AI-driven tools, but also to foster a critical discussion about AI, and to build trust in the technology given that they are often seen as transformative technologies regarding the way news is produced, and how journalists will interact with audiences.

As with all research, this study has certain limitations. First, the study only offers a snapshot of current governance approaches, and most initiatives are still in their early phases. Many news organizations have just begun looking into the ethical issues of AI technology (Porlezza & Ferri, 2022). Many institutions of media self-regulation like press councils still do not have concrete ethical guidelines for the use and application of AI technology (Porlezza & Eberwein, 2022). Hence, there is still a lot of uncertainty about how to specifically tackle the technology from a governance perspective.

Second, discussing governance approaches with responsible people at PSM are complex because not in every case interviewees will reveal their plans given that we are dealing with a sensitive topic.[59] This makes an in-depth discussion of how to implement values in AI-driven tools, and more in general how to develop a governance approach for PSM more difficult.

Future research should therefore specifically look into the way that news organizations understand transparency and accountability in their codes of ethics, in particular about the design of AI technology and machine learning. In addition, it could also be useful to know how news organizations will explain notions e.g. of transparency or diversity for instance in news recommenders not only to their journalists but also to their audience.

5.1 Policy recommendations

First of all, PSM should be leaders in the news industry when it comes to the ethical considerations revolving around the use of AI technology in news production and dissemination due to their central role as providers of services that are crucial for democracy and fundamental rights: “The next generations of AI will make targeted personalized media even more sophisticated in their ability to know and manipulate citizens. This challenge requires active updating of European media systems, and PSM should aim to be pioneers and models in the application of AI ethics in media distribution. (…) our PSM must be on the vanguard of this form of civic innovation, learning how to apply these in the era of powerful

[59] The fact tha France Télévisions has not responded our calls might be due to this.

media" (Tambini, 2021). The following seven policy recommendations are thus based on the findings of the study.

1) PSM should develop an *AI strategy* that is grounded on a public service- and citizen-oriented approach when it comes to AI ethics. Supporting plurality, diversity, respect and the positive promotion of basic rights and freedoms should be a primary goal of the use of these technologies. This also requires the need of editorial checks, even with automated content.
2) PSM should develop clear *principles for design and machine learning* that are grounded on the core values of public service. Such an "ethics by design" approach is crucial to building inclusive tools, that serve all users, that respect diversity and privacy, and that do not have dysfunctional impacts. These principles should guide the development of AI technology throughout all design stages, and should also remind developers about the specific pitfalls that an editorial context includes.
3) PSM should adapt their *editorial guidelines* regarding the use of AI technology in all phases of the news cycle, including the dissemination of news content. The editorial guidelines should offer a rationale for the use of AI technology, and should delimit the scope of AI to specific use cases. The editorial guidelines should also state the benefit that users can get from AI technology.
4) PSM should adopt clear policies regarding *transparency*, making it clear what kind of technologies are being used, and what for. This includes the development of a conscious data culture (what data is needed, how much, what is being done with the collected data, how can users control their data?) and explanations regarding the potential implications of automated technologies, and how they impact the users' experience. This also means explaining in plain language what specific systems such as e.g. news recommenders do.
5) PSM should, at every time, indicate the *responsibility* for the output of specific tools. In times of disappearing authorship due to automated journalism, clear attribution is necessary to avoid the perception of disappearing responsibility.
6) PSM should develop *internal auditing processes* that regularly evaluate the used algorithms in order to verify whether they work properly.
7) PSM should consider aspects of sustainability and human competence, by following human-in-the-loop principles concerning the design of AI technology.

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Annex A

Analyzed documents in the different countries

Switzerland

- Zukunft der Medien- und Kommunikationsordnung Schweiz: Trends, Szenarien, Empfehlungen, Eidgenössische Medienkommission EMEK, 2017
- Strategie Digitale Schweiz, 2018
- Aktionsplan Strategie Digitale Schweiz, 2019
- Künstliche Intelligenz, Medien & Öffentlichkeit - Bericht der Projektgruppe «Künstliche Intelligenz, Medien & Öffentlichkeit», Bundesamt für Kommunikation, 2019
- «Internationale Gremien und künstliche Intelligenz» - Bericht der Projektgruppe «Internationale Gremien und künstliche Intelligenz», 2019
- Herausforderungen der künstlichen Intelligenz - Bericht der interdepartmenetalen Arbeitsgruppe «Künstliche Intelligenz» an den Bundesrat, Staatssekretariat für Bildung, Forschung und Innovation SBFI, 2019
- Strategie Digitale Schweiz, 2020

Germany

- Recommendations of the Data Ethics Commission for the Federal Government's Strategy on Artificial Intelligence
- Gutachten der Datenethikkommission
- Artificial Intelligence Strategy
- Zwischenbericht ein Jahr KI-Strategie
- German Standardization roadmap on artificial intelligence
- Strategie Künstliche Intelligenz der Bundesregierung, Fortschreibung 2020
- Projektgruppe „KI und Medien" - Zusammenfassung der vorläufigen Ergebnisse
- Kompetenzentwicklung für KI, Veränderungen, Bedarfe und Handlungsoptionen

France

- How can humans keep the upper hand? The ethical matters raised by algorithms and artificial intelligence, Commission Nationale Informatique & Libertés, 2017
- For a meaningful artificial intelligence - Towards a French and European Strategy (Villani Report), 2018

- S’engager dans l’intelligence artificielle pour un meilleur service public, Conseil d’Etat, 2022

Finland

- My Data - A Nordic Model for human-centered personal data management and processing, Ministry of Transport and Communications, 2014
- Finland’s Age of Artificial Intelligence - Turning Finland into a leading country in the application of artificial intelligence. Objective and recommendations for measures, Ministry of Economic Affairs and Employment, 2017