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L'automatisation au cœur de l'industrialisation des médias numériques

Automation at the heart of the industrialization of digital media

La automatización en el corazón de la industrialización de los medios digitales

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Outline of the paper
Introduction
Automation as a vehicle for industrialization
Changes in the media ecosystem and media practices
From automation to rationalization
Conclusion
Bibliographical references

Résumé

La montée en puissance des infomédiaires et des social media amène l'ensemble de l'écosystème numérique à se réorganiser. Ces transformations s'opèrent dans le contexte d'une évolution notable des pratiques médiatiques des publics mais elles participent avant tout d'une mutation industrielle marquée par l'émergence d'acteurs intermédiaires capables de structurer l'accès aux contenus grâce notamment à la puissance de leurs techniques automatiques. Ce phénomène concerne désormais l'ensemble des éditeurs de contenus et a fortiori les médias d'information qui font l'objet de nos analyses dans ce texte. Dans un contexte de fragilité financière déjà marquée, la perte progressive du contrôle de l'accès au bénéfice des intermédiaires amène les médias d'information à rationaliser davantage l'ensemble de leurs activités. Mais d'autres raisons y contribuent, comme la compétition avec des sources d'information de plus en plus nombreuses, la pression de l'audience ou les délais de publication, la déclinaison des contenus dans des formats et sur des supports divers, etc. L'ensemble de ces réorganisations témoigne d'une accélération de l'industrialisation où l'automatisation joue un rôle structurant dans la mesure où elle favorise l'intégration des chaînes d'activités et l'interdépendance d'acteurs extrêmement divers.

Mots clés

Automatisation des médias, industrialisation des médias, information numérique, pratiques numériques.

Abstract

The rise of infomediaries and social media is driving a reorganization of the entire digital ecosystem. These transformations are taking place in the context of major changes in the media practices of publics, but above all they bear some of the characteristics of an industrial shift marked by the emergence of intermediary players capable of structuring access to content thanks in particular to the potency of their automated techniques. This phenomenon now concerns all content publishers and especially the news media, which form the subject of our analysis in this paper. In a context of already marked financial fragility, the gradual loss of control over access to the benefit of intermediaries is prompting the news media to further rationalize all their activities. But there are other contributing factors, such as competition with increasing numbers of information sources, pressure from audiences or publication deadlines, the transposition of content for different formats and media, etc. All these reorganizations reflect an accelerating pace of industrialization, with automation playing a structuring role insofar as it is promoting the integration of business chains and the interdependence of extremely diverse players.

Key words

Media automation, media industrialization, digital information, digital practices.

Resumen

El auge de los infomediarios y las redes sociales está impulsando la reorganización de todo el ecosistema digital. Estas transformaciones tienen lugar en el contexto de una evolución significativa de las prácticas mediáticas de los públicos, pero forman parte sobre todo de una mutación industrial marcada por el surgimiento de actores intermediarios capaces de estructurar el acceso a los contenidos gracias en particular al poder de sus técnicas automáticas. Este fenómeno ahora se refiere a todos los editores de contenido y especialmente a los medios de comunicación que son el tema de nuestros análisis en este texto. En un contexto de fragilidad financiera ya marcada, la pérdida gradual del control sobre el acceso en beneficio de los intermediarios ha llevado a los medios de comunicación a racionalizar aún más todas sus actividades. Pero otras razones contribuyen, como la competencia con más y más fuentes de información, la presión del público o los retrasos de publicación, la declinación de los contenidos en formatos y en diversos soportes, etc. Todas estas reorganizaciones muestran una aceleración de la industrialización, donde la automatización desempeña un papel estructurador en la medida en que promueve la integración de las cadenas comerciales y la interdependencia de actores extremadamente diversos.

Palabras clave

Automatización de los medios, industrialización de los medios, información digital, prácticas digitales.

Introduction

Under the combined effect of the roll-out of digital socio-technical infrastructure on a large scale, the growing power of the GAFAM, changing content formats and types and, last but not least, changing practices of publics (access, methods and media used to consult content, reading habits, etc.), the so-called "traditional" media - which have themselves already converted to digital - are faced with a set of interlinking challenges that concern all their activities (publishing, production, broadcasting/ dissemination/distribution, marketing, etc.).

This transformation of the entire media ecosystem has been interpreted in many different ways. Some authors associate it with a profound cultural shift that has resulted in a new paradigm for receiving content that they claim is now structured around participatory practices (Jenkins, 2006). According to this approach, the media are having to reestablish their identity under the twin constraints of the publics' "collective intelligences" and the transformation of the medium. Other authors consider that this is primarily an industrial transformation (Miège, 2000) in which the undeniable changes in media practices are playing an important role, but in conjunction with strong industrial rationales and with the strategies of key players having structuring effects, rather than a sweeping cultural transformation capable of reorganizing the media ecosystem "from the bottom up".

We will adopt this second viewpoint in this paper. We will focus our analysis on a certain number of transformations affecting the media ecosystem that are related to the rise of automation. We will look more particularly at certain transformations of online news content, viewing them from the perspective of socio-economic changes driven by the structuring role now performed by intermediary players.

To begin, we will situate this consideration within the approach adopted by the information, culture and communication industries, asserting that numerous processes taking place today bear similarities to the industrialization process. We will then continue by placing these transformations in the context of the changes in content receipt and access practices being driven and harnessed by digital giants such as Google and Facebook. Next, we will highlight a certain number of consequences these changes are having for the news media, mentioning in particular the new forms of rationalization that are affecting editorial activities.

Automation as a vehicle for industrialization

With the benefit of hindsight, we can now interpret the "digital transformation" of the media as a new stage in their industrialization (Miège, 2000, 2007; Moeglin, 2007; Bouquillion, Miège, Moeglin, 2013). To situate our reasoning, which aims to account for certain specific aspects of the industrialization process currently taking place, we will adopt the approach developed by Pierre Moeglin, that of the industrialization of education. Although this approach was developed in a different context, we consider that its principle – consisting in identifying the generic "markers" specific to the industrial paradigm – is perfectly transposable to our case. The three "industrialization markers" identified by Moeglin (2016, p. 54), namely technologization, rationalization and ideologization, can also characterize media industrialization in a digital context.

We insist here on technologization, and more particularly on automation, which is one of its specific forms and seems to be playing a key role in the current reorganization processes. But it should also be recalled that this is an intellectual segmentation that will allow us, for the sake of efficiency, to focus only on certain specific rationales, because these three markers are in reality closely interconnected, as will transpire through the forthcoming analyses, during which we will demonstrate

in particular that the current automation process cannot be considered without also addressing the rationalization aspects it fosters.

To identify more clearly any hitherto unseen aspects of the current media technologization trend, we propose to consider "automation" and "mechanization" as specific forms of technologization and to make a distinction between them.

We will use the term "mechanization" to refer to the partial or complete technologization of specifically determined activities. Mechanization is implemented in controlled processes or support systems and, in this respect, represents a traditional vehicle for industrialization, which has been at work in the media field for a very long time.

We underline the fact that mechanization can include automated systems that may or may not be computerized, as well as complex equipment (rotary presses, audiovisual equipment, telecommunication systems, etc.). Mechanization can also concern many activities and play a role of varying importance within them (while it is widespread in manufacturing, it can also contribute to editing, publishing, production or broadcasting/dissemination processes, particularly in the audiovisual field (Miège, 2000).

Therefore, the specific nature of mechanization stems not from the equipment used or the activities in which it is deployed, but from the rationales governing its implementation and those that it fosters. Mechanization is characterized mainly by a relatively controlled level of instrumentation and by its relative capability to structure an ecosystem of players. While it creates many interdependencies that can be a heavy burden for some players, other rationales are often more powerful: in socioeconomic terms, for instance, such rationales include those that organize the media markets, while, in editorial terms, professional rationales traditionally play a more structuring role than mechanization as such.

We use the term automation to describe a form of technologization with somewhat different characteristics insofar as it could incorporate different activity chains and players while making them interdependent, thus multiplying its structuring effects. As it is defined here, automation is based on an ecosystem of digital resources including equipment (computers, tablets, smartphones, etc.), intermediate services (social media, search engines, etc.), various types of software and applications (audience measurement, trend prediction, automated writing/editing/publishing, data visualization, etc.), and data and content of various types (public data, professional and amateur data, etc.). It now concerns all media-related activities, fostering connections between downstream and upstream operators but also cross-cutting interdependencies, especially between media players and infomediaries.

Considered from this viewpoint and as a large-scale process, automation is, in a way, a phenomenon that was initially exogenous to the media. It was initially driven by the "digital giants", which emerged and are developing outside the traditional media industries according to rationales that these sectors largely failed to anticipate but that soon began having an impact on them (Rebillard and Smyrnaios, 2010). Automation is one of the preferred approaches through which the industrial rationales of the GAFAM are being imposed on the media and contaminating their activities, mainly from downstream (but no longer exclusively so, as will be shown below).

For example, we can point to the increasing number of points through which media can be accessed in today's digital context, which is increasingly depriving media players of means of controlling distribution and dissemination: content is increasingly viewed via connected devices (PC, smartphone, tablet, etc.) that require specific services (in terms of connection and, in particular, information intermediation) upon which the traditional media depend to ensure a degree of visibility. We can also mention the rationalization of editorial activities in a context of accelerating content-posting rates driven by "digital competition", as well as the highly fragile nature of the digital economic models (Rebillard, 2011).

This context may explain certain rationalization strategies such as recycling published content (with varying levels of automation and entailing adaptation to different formats, aggregation of content, exploitation of content produced by third parties, etc.) or increasing the number of dissemination/distribution methods and access points (own platforms, social media, various portals, news feeds, content aggregators, etc.).

The media are not all affected by these phenomena to the same extent, but the trend has now been set in motion and is gradually being generalized. The current transformations demonstrate the structuring nature of the digital industrial rationales that are now increasing the interdependencies within the information, culture and communication industries. It is important to emphasize the complexity of these rationales, which result from diverse environments that have been shaped by widely differing interests, visions, professional cultures and skillsets (often far removed from traditional media cultures and, notably, journalistic cultures). Beyond their sometimes deliberately provocative character, the comments made by certain "representatives" of players that personify or initiate these rationales are enlightening:

"In 2014, when the New York Times's late columnist David Carr interviewed Greg Marra, Facebook's [News] product manager, Marra was quoted as saying: ''We try to explicitly view ourselves as not editors''. He said, "We don't want to have editorial judgement over the content that's in your feed. You've made your friends, you've connected to the pages that you want to connect to and you're the best decider for the things that you care about" (Bell and Taylor, 2017).

The above quote conveys a point of view shared by many infomediaries and social media players which, for a variety of reasons (professional cultures and skills, economic interests, legal liability, etc.), want to be set clearly apart from the news media and are deploying performative effects in an attempt to eradicate the numerous interdependencies that now connect them to these sectors (Staii, 2014; 2015). The above quote can be complemented by statements made by other players who position themselves very closely to the news media while without necessarily sharing their vision. In this respect, one of the pioneers in data journalism, Adrian Holovaty, wrote the following on his blog in 2009:

"It's a hot topic among journalists right now: Is data journalism? Is it journalism to publish a raw database? Here, at last, is the definitive, two-part answer: - 1. Who cares? - 2. I hope my competitors waste their time arguing about this as long as possible"
(Holovaty, http://www.holovaty.com/writing/data-is-journalism/)

This unabashed statement summarizes the ambivalent relationship between the infomediaries and the "media" that have completely embraced the shift to social networks, on the one hand, and the content-publishing media (in particular the news media) on the other hand: the former refute the notion that they are playing on the same field and on the same terms as the latter, and they are keen to assert their specificity and independence while exploiting and promoting rationales that have major consequences for the latter. Before examining some of these consequences (focusing particularly on those that are affecting the news media), it is important to take stock of the recent transformations in the digital ecosystem and in the practices of publics.

Changes in the media ecosystem and media practices

There is no lack of studies and analyses on the changes taking place in the media ecosystem and media practices in the digital context. To contextualize the transformations in the news media we will discuss some of them below, grouping them for the sake of brevity according to the results of the survey performed in 2016 by the Reuters Institute for the Study of Journalism and the University of Oxford (Reuters, 2016). This large-scale survey provides comparative data on digital practices related in particular to the consumption of news content in 26 countries with highly developed media systems, including France. The data were obtained by surveying representative samples of the internet-using population in each country (in France, 2162 people were interviewed – Reuters, 2016, p. 5). W will complement this survey with data obtained from other studies as required.

We know that the percentage of internet users has increased significantly in the past few years. In France, most of the population now has access to the internet (87% of the population, CREDOC, 2016), and connection frequency and time spent online have also increased considerably. It has been estimated that 74% of the French population logs on to the internet on a daily basis, with a weekly connection time of 18 hours, meaning that "internet consumption" time is now similar to the time spent watching television, which nevertheless remains the most consulted medium with 20 hours per week on average across the entire population (CREDOC, 2016, p. 13). However, this order changes if one focuses only on internet users, and even more so in the case of people who use the internet heavily on a daily basis.

While it is worth calling this comparison into question, notably because the internet cannot be equated with a "medium" and online practices include a wide variety of activities (both professional and private; practical, communicational, informational and cultural in the broad sense, etc.), the above orders of magnitude reflect the considerable scale of online practices and the key role performed by players who facilitate connection and access to online content.

If we narrow our focus down to how news content is "consumed", it should be noted that 71% of French people access this content via online digital media (compared with 74% via television, 28% via radio and 27% via print media). In this respect, French people are generally below the average of the 26 countries concerned by the Reuters barometer, which estimates that approximately 82% of the publics inform themselves using digital media (Reuters, 2016, p. 85-86). This increasingly clear preference for digital media has two types of noteworthy consequences.

Firstly, the information sources consulted are becoming more diversified and social media are now clearly one such source. In 2016, 9% of French internet users declared that social media were their main source of news (compared with only 5% in 2015) (Reuters, 2016, p. 9). Practices vary from one country to another, but the phenomenon is on the rise everywhere. The widely varying factors explaining this include a correlation between the use of social media as a source of information, the diverse nature of the media system and the level of trust placed in traditional media. Unsurprisingly, this practice varies with age and is much more widespread among 18- to 34-year-olds (28% across all the countries covered by the survey) (Reuters, 2016, p. 9).

Beyond the social media in the strict sense, note should be made of the growth of other information sources such as "aggregation media" (Buzzfeed, etc.) and, above all, portals (Yahoo, MSN, etc.), which – in certain countries – represent the main online sources of information and news: in the USA, the Yahoo! portal is the leading online news source, representing 28% of users (followed by the Huffington Post and Fox News). The situation is somewhat different in France, where the most consulted online medium is the website of free daily newspaper "20 Minutes", which attracts 19% of users (closely followed by two other newspaper websites: Le Monde - 18% - and Le Figaro - 15%). The situation is even more different in the United Kingdom, where the undisputed leader is the BBC News website, attracting 51% of users looking for online news, far ahead of the MailOnline (17%) and the digital version of The Guardian (14%) (Reuters, 2016, p. 89). These data qualify the importance of social and alternative media as news sources, even though the rise of these "media" can be addressed from other viewpoints with direct consultation being merely the tip of the iceberg, but we will return to this question below.

Secondly, access to news media is increasingly dependent on intermediate services that are controlled by players outside the traditional media ecosystem. As we underlined above, these players want to set themselves clearly apart from it (at least on the surface) for a wide variety of reasons, starting with economic considerations. Indeed, publishing content - news content in particular - is an activity that requires specific skills, has a considerable cost, and exposes the medium that takes responsibility for the information to a series of well-known risks (difficulty of finding a public, a complex and fragile economic model, legal liability, etc.). The intermediaries and many of the pure players do not have the skills required to embark upon this type of activity and it is not in their strategic interest to do so, even though it is necessary in order to fill their pages and generate high audience levels. And yet their choice to position themselves downstream, as close as possible to the publics, and to establish themselves increasingly as indispensable players who direct users towards content and filter access to it, is paying dividends for the time being.

One thing is evidenced clearly by the changing news viewing practices: irrespective of the source consulted and the device used (computer, mobile, etc.), just 27% of French web users go directly to the source medium. Most users go through intermediate services, mainly search engines (35% of users), social media (26%), email (22%) and mobile alerts (14%; Reuters, 2016, p. 92). This situation varies from one country to another and must be viewed in relation to numerous factors that complement digital viewing practices per se, such as loyalty to a given medium, strength of the "media brand", level of pay-service consumption, subscriber rate, etc. However, even though these factors can explain the wide discrepancies between countries, a majority of web users access news sources directly in just three countries (Norway, Finland and Denmark) out the 26 covered by the study quoted above. The rationale becoming increasingly widespread is hence to use an intermediate service that guides the user towards the information source (e.g. a search engine, principally Google) or to view published information on a third-party platform (as is the case with information portals and, notably, news feeds on social media, dominated largely by Facebook).

From automation to rationalization

A large amount of other data could be cited to shed light on the changes taking place in digital practices and the news media ecosystem, but a few major conclusions can already be drawn at this point.

First of all, a certain number of editorial and economic changes affecting the news media today can be viewed in direct relation to the transformations in viewing practices mentioned above.

From an editorial point of view, all online media must reckon with the dominance of Google in terms of information searches. Each of them must henceforth integrate this player's requirements – some more explicit than others – into all its content editing, publishing and dissemination activities. Content must now be written and published in accordance with "search engine optimization" guidelines. Publications must include the metadata that are vital for ensuring good visibility but also for other potential uses (such as inclusion in news feeds or content compilers). Audiences are monitored constantly using metrics with varying levels of detail (such as those supplied by Chartbeat, a resource that has become indispensable for all editorial offices) that provide real-time feedback on published content in order to make it more visible or attractive or simply to reorganize its presentation or move it to a different location on the platform. All of these operations involve automated techniques echoing those that orient access to the content, some of which are more opaque than others.

Thanks to the capabilities of its automated techniques, which are indispensable in the digital environment, the search engine filters access to published content and can exploit it free of charge to generate traffic on its own pages and thus collect considerable revenue (by displaying advertisements or collecting marketing data). After protesting for a while, the media were forced to admit that the balance of power was clearly not in their favor and they have relinquished their claim to a share of the advertising revenues collected by search engines. Even the most powerful media groups do not have the means to put pressure on Google, and those that have tried (such as the Springer group in Germany) were quickly penalized. The threat of being de-indexed is a sufficiently effective weapon given that a significant proportion of content is accessed via this search engine (to put the Springer vs Google case into context, it should be noted that the weight of search engines as a traffic source is even higher in Germany than in France, with 37% of users viewing online news media via a search engine - Reuters, 2016, p. 92).

The news media are equally obliged to depend on the social media, particularly Facebook, which controls a means of access to digital information that is destined to become as important as the one dominated by Google, notably on account of the growing popularity of mobile devices. The number of news pages viewed via smartphones and tablets is growing exponentially, and a sizable proportion of these users do so via social media.

Through its filters and news feeds, Facebook provides differentiated access to information tailored, among other ways, to the user's activity and contacts, the type of content "wanted" by the user and disseminated by the medium (topics, formats (video, images, text, etc.)), the number of "likes" and comments, etc. Media that publish content have no choice but to acknowledge the dominant position of this intermediary and tailor their output to its requirements. To make it easier for the media to access its news feeds while maintaining the opacity surrounding its filters (which make a vital contribution to consolidating its position), Facebook now offers publishers a special service (called Instant Articles) enabling them to develop their content directly in formats and for a platform that does not belong to them, in exchange for which it deducts a significant share, around 30%, of the advertising revenue. The success of this service, which has been only relative up to now, will clearly depend on Facebook's future ability to incite its huge pool of users to access media information on a regular basis... and on the medias' inability to find alternative dissemination solutions.

Against this backdrop of losing downstream control, certain media – specialized or otherwise or with "weak brands" (e.g. those only recently launched) – consider that the battle has already been lost and are no longer developing their own platform. They are focusing their efforts on publishing content that they provide via third-party platforms, chiefly social media. For certain media, such as NowThis,

this deliberate choice reflects the roll-out of a "holistic approach to information" that claims to be highly innovative (hitherto unseen information formats, vision of the role of news media and news events, relationships with publics, etc.).

These examples demonstrate clearly that a highly powerful industrial rationale based on increased automation is currently reorganizing the media ecosystem. Even though this rationale is driven mainly by well identified players such as Google or Facebook, which are playing a structuring role, it is appropriate to refer to it as an industrial rationale rather than a strategy rolled out by established players, because these rationalities now prevail right across the digital media ecosystem.

This rationale is having multiple cascading effects and progressing all the more surely since it is not meeting any significant technological, legal or ethical opposition. As yet there are no signs of an emerging technological alternative that would enable digital media to take back control of access and thus secure a direct relationship with their publics. Mobile applications are an imperfect solution, chiefly because the publishers are fragmented, it is difficult to build loyalty among publics, and the current viewing practices encourage a mixing of sources, and even a mixing of activities (informational, communicational, cultural, etc.). Moreover, there is at present no real legal impediment since these industrial rationales and the players that are disseminating them operate at a transnational scale and often outpace any attempts to impose regulations (to the extent that any exist...). Lastly, there is no real ethical opposition either because publics seem for the time being relatively unconcerned by the remuneration of media and reluctant to pay for their content or even to recognize their legitimacy. In France, for example, just 11% of users paid for information consumed online in 2016, with an average budget of approximately 40 euros (mainly one-off payments with relatively few subscriptions; Reuters, 2016, p. 102). As regards the legitimacy of the media, it is constantly being called into question, with less than a third (28%) of French people saying they generally trust the news media (Reuters, 2016, p. 25).

In this relatively unfavorable context, the news media themselves increase their dependence on infomediaries and social media when they retrieve more or less ready-to-use content from them (via monitoring tools sometimes supplied by these same social media, such as Twitter's TweetDeck, or by using specialist services such as those provided by agencies of a new type such as Storyful), or when they use social media for gauging publics' centers of interest or even as an actual editorial management tool enabling them to identify topics likely to interest their publics, but also formats and content that have already proved their worth (Staii, 2015). The media are not all concerned in the same way by this trend: some readily admit to implementing this downstream-driven management approach (Melty, Buzzfeed, etc.), while others turn to it sporadically as one editorial policy tool among others.

This tendency is facilitated by the increasing automation of all media and boosted by digital competition and the quest for rationality in a context of financial weakness. To set this latter aspect in its context, it should be recalled that advertising expenditure by advertisers in France has leveled out in recent times at a figure roughly equivalent to that of the early 2000s (i.e. under 11 billion euros - UDA, 2015, p. 3), whereas the media system has expanded since then and a new market – online and mobile-based advertising – is experiencing very strong growth. Moreover, as we have already stressed, a significant share of online advertising revenue is siphoned off by infomediaries and social media. An increasing number of players must hence share out the meager fruits of sluggish revenue growth. In this context, all the media are striving to rationalize their activities; those that are the most

costly and relate, for instance, to content publishing, will no doubt not be exempted.

Conclusion

The examples we have developed in this paper are just a few among many demonstrating forms of automation-based industrialization that have advanced to varying degrees.

These include automated journalism, which still has a limited number of applications but has gone beyond the mere experimental stage. Since operational software programs such as Wordsmith arrived on the market, more and more content publishers have begun using them for obvious rationalization reasons, since they enable multiple texts to be produced at lower cost. Going by the figures published by the company that develops this software (https://automatedinsights.com/wordsmith), approximately 1.5 billion news briefs published each year by giants such as Associated Press, Yahoo or Microsoft are generated using this software (which, incidentally, is designed not just for "media" but for all digital content publishers with sizeable databases who wish to convert their data into texts personalized to varying degrees depending on the users' profiles). As for the quality of such texts (mainly descriptive news briefs: sports results, stock quotes, life hacks, etc.), it is tending to improve, as a number of studies have shown (Clervall, 2014).

It should also be recalled that dedicated media are not the only players behind the expansion of data journalism. This new form of journalism, which aims to radically transform the profession, is now becoming a component of many online news media not just as an investigative technique, but also as a "section" in its own right offering specific formats (as is the case, for instance, with The Guardian in the United Kingdom, which has a data journalism sub-section within its Media section, Le Monde in France, which has a section called "Les Décodeurs", and the blogs they host). This new form of journalism has significant implications: in terms of its approach to investigation, which presupposes mass data harvesting and the use of sometimes complex automated filtering, cross-checking and – above all – visualization techniques; in terms of the approaches of publics, who are deemed at the very least to be well informed if not actively engaged (they are able to select specific angles on information by using visualization tools, and may be invited to participate in an investigation by verifying or supplying additional ad-hoc information – a practice which is currently underdeveloped in France but more widespread in the English-speaking world), and so on. This new approach to information has some significant challenges to meet in terms of contextualizing, explaining and interpreting the data published. These challenges are all the more important since data journalism is not reserved for news media and their professionals (it should also be noted that the teams in charge within media organizations are fairly small).

Behind each of these trends we find these three characteristic dimensions of industrialization: automation, rationalization and ideologization. We have glossed over the third dimension, but the above examples highlight its importance: indeed, automated journalism and data journalism are reviving idealizing visions of the technique that would inevitably go beyond its function as an instrument in a digital context. These experiments are bringing together both new and old imaginaries: the new ones include those of personalized information, constant interaction, public participation and civic responsibility, while the old ones include those of technical efficiency and artificial intelligence which, it is worth remembering, are no doubt more similar to the cultures from which the infomediaries and social media emerged than to the cultures forged by the traditional media industries.

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