How infomediation platforms took over the news: a longitudinal perspective

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Abstract

This article considers the question of the increasing power of the internet industry over online news media. Having closely observed the ever-changing relations between these two types of actors over several years in France, we propose a longitudinal perspective on the subject that draws upon the political economy of communication. We base our analysis on the notion of *infomediation*, as opposed to the more widely used concept of *platformization*, because the former term better apprehends the different dimensions of this complex phenomenon. In total, 51 interviews carried out between 2003 and 2016 with publishers and individuals within internet firms have been re-examined for the purposes of this research. This empirical material sustains our main hypothesis, namely that the relations between news publishers and infomediaries are becoming more integrative but also more asymmetric. We claim that this situation is distinct from the previous phase of *coopetition*, where relations between infomediaries and news producers were more distant yet characterized at the same time by competition and cooperation. The current configuration can be understood as involving a *collusion* of interests and a *dilution* of the media into distribution platforms.

The mid-2010s have been marked by two major phenomena in digital journalism. On the one hand, online news consumption has moved increasingly towards mobile devices. In the United States a study on major news media by the Pew Research Center (2016) shows that mobile traffic surpassed desktop traffic in 2015. At the same time, this shift towards news consumption on mobile devices illustrates that the crossover between content distribution and interpersonal communication mainly benefits social media such as Facebook, Twitter or Snapchat. According to the Reuters Institute, 51 percent of US internet users got news via social media in 2017 – up five percentage points on the previous year. The user numbers accessing social media for news doubled between 2013 and 2017 (Newman et al., 2017).

In 2015, this increasing news consumption through social media encouraged Snapchat and Facebook to create mobile-dedicated services, namely, Discover and Instant Articles respectively. In that same year, Apple News and Google's Accelerated Mobile Pages (AMP) were also launched. Subsequently, tech companies consolidated their control over online news distribution channels to the point that Google, Facebook and Twitter alone account for more than 70 percent of incoming traffic to US publishers throughout 2017 (Source: Parse.ly's sample of more than 2,500 online media sites). According to a Tow Center for Digital Journalism report, this trend brings the risk that the news media will shift into a "Platform Press" (Bell and Owen, 2017).

Notwithstanding these recent developments, the penetration of the media sector by internet companies started many years ago. It has existed at least since the mid-1990s with the launching of news portals by Yahoo! and AOL. Also, one of the first online magazines, Slate, was created by Microsoft in 1996. However, tech companies only really started to impose themselves on the field of digital journalism from the mid-2000s on. In this respect, a particularly important initiative in 2002 was the launching of Google News in the USA. It embodied an emblematic case of news *infomediation* which we have defined as the capacity of technology firms to organize the online news market by aggregating, editing and distributing third party content (Rebillard and Smyrnaios, 2010; Smyrnaios, 2018). Indeed, as a central activity in the internet industry, infomediation consists in computer-assisted matching between third-party content and users' individualized demands (including a set of socio-technical distribution and editorial packaging operations).

Subsequently the use of infomediation services increased throughout social media and mobile apps, to the point where one could distinguish between different types of infomediaries, namely *algorithmic* (e.g. Google News), *social* (e.g. Facebook, Twitter, Snapchat) and *applicational* or *transactional* (e.g. Apple News+, Google Play) (Rebillard and Smyrnaios, 2011). This typology is based upon the particular combination enabled by a given infomediary between automated, social and transactional principles in matching news demand and supply, all of which are present in the mix.

Research has thoroughly interrogated how global companies work to materially coordinate flows of information, communication and culture, thus linking the evolution of news media with more general political, technical, and economic trends (Birkinbine et al., 2016). Nevertheless, despite the rising importance of news infomediation since at least the mid-2000s, before 2015 little empirical research and no longitudinal study had been done specifically on this trend apart from a few case analyses (Del Águila-Obra et al., 2007; Smyrnaios and Rebillard, 2009; Siapera, 2013). Recently, in response to calls to refocus the research agenda of media studies beyond the boundaries of news organisations towards a socio-technical approach (Lewis and Westlund, 2015) and especially towards algorithmic systems (Napoli, 2014), there has been a surge of empirical studies in this subject area (Just and Latzer, 2017; Nechuchstai, 2018; Nielsen and Ganter, 2018; Tambini and Labo, 2016; Tandoc Jr and Maitra, 2018).

This sudden emphasis on "the importance of studying … outside entities like platform companies when researching changes in news production" (Kalogeropoulos and Nielsen, 2017: 16) seems closely related to the two phenomena highlighted at the beginning of this text: news consumption on mobile devices and social media. As such, the study by Kalogeropoulos and Nielsen shows that "most online video news is produced first and foremost (1) to be viewed on smartphones rather than on personal computers and (2) distributed via platforms like Facebook and YouTube rather than on the websites of news organizations themselves" (2017: 4). This recent

wave of research documents thoroughly the way in which tech companies reinforce their hold over publishers.

Having closely observed the ever-changing relations between these two types of actors over several years, we propose to complement this corpus of research in three ways. First, we will add an international perspective to the Anglo-American literature by describing the situation in France, a country with a different set of media, social and political characteristics; second, we will adopt a longitudinal perspective that will allow us to identify how the relations between publishers and infomediaries have evolved through time; finally, on a conceptual level, we will base our analysis on the notion of infomediation, as a complement to the more widely used concept of platformization. The former term, we believe, can help us to apprehend different dimensions of the phenomenon under study.

After presenting our theoretical framework from the political economy of communication and media studies research traditions, we will introduce the empirical material that sustains our main hypothesis, namely that the relations between news publishers and infomediaries are becoming more integrative but also more asymmetric. This process comprises at least three aspects:

1. By providing access to news, infomediaries capture significant volumes of audience data, and this reinforces their power over the advertising market at the expense of publishers.

2. News is not just modularized to the point of becoming a "contingent commodity" (Poell et al., 2017), adaptable to the infomediaries' various delivering formats. It is also increasingly hosted directly on distribution platforms and even conceived according to their logics.

3. Journalists are not only provided with a variety of tools provided by infomediaries in their everyday work, they are also now being trained and funded directly by the infomediaries to the point of virtually incorporating these companies as subcontractors.

Finally, we claim that this situation is distinct from the previous phase of *coopetition*, where relations between infomediaries and news producers were more distant, characterized at the same time by *competition* but also inevitable *cooperation*. Instead, the current configuration, which has emerged circa 2015, can be understood as a process of both *collusion* of interests and *dilution* of the media into distribution platforms.

Theoretical framework

Our work is grounded in the cultural industries approach, within the critical political economy of communication. In the realm of the cultural industries we combine a socio-economic analysis of industrial channels with the study of related formats and content. Through this approach we identify *infomediation* as a key concept for understanding the structure and functioning of the industrial channel of online news. Because infomediation tends to share some characteristics with the more recent concept of platformization, we will examine the latter in order to both clarify and enrich our own theoretical framework.

Platformization through the lens of political economy

Historically, news media are at the heart of the public sphere, which is comprised of the physical and symbolic arenas where political views and opinions confront each other. Indeed, news media are part of multiple local spaces spread over diverse social communities (Kluge, Negt, 2016) in which "the informally mobilized body of nongovernmental discursive opinion … can serve as a counterweight to the state" (Fraser, 1990: 75). At the same time, the news media are part of a vast industry governed by economic rules and material constraints. The theoretical objective of the political economy of communication is to examine critically the contradictory articulations of economy, technology, culture and politics that shape the mass media:

> Media businesses are just like every other capitalist business. But, they are also quite distinct from other industries because of the nature of the commodities they produce: Their products are also ideas objectified into "cultural" products (e.g. television shows, news stories, music) (Nixon, 2015: 263).

The development of digital technologies and their interference with culture has revealed a whole new set of questions for the political economy of communication. Among the main characteristics of this digital turn, one of the most remarkable was the arrival of new actors whose intermediary position between cultural producers and the public was of major importance (Bustamante, 2004).

Over the past years, an important body of research has developed on this subject, often designated as *platform studies*. Although these writings do not always claim direct links with political economy, they present nonetheless a broad acceptance of a material - if not materialist - approach to mass communication : "Such efforts to dig up the material infrastructure that make up what we call 'the Internet' offer new directions for PEC research … while many of the scholars trying to open the 'blackbox' of digital media refer to themselves as 'the new materialists', they seem quite reticent about identifying with the 'old materialism'" (Winseck, 2016: 97). Platform studies examine the social, economic and political dimensions of communication phenomena, although with a particular focus on technical dimensions (Plantin et al., 2016). Thus, they are interesting to us in the context of this article in several respects.

At an ideological level, the concept of platform refers to a "populist ethos" and a supposedly "progressive and egalitarian arrangement" that *"fits neatly with the long-standing rhetoric about the democratizing potential of the Internet"* (Gillespie, 2010: 353). This discourse masks the growing privatization and commodification of utilities and infrastructures under neoliberal hegemony as *"Google, Facebook, and a handful of other corporate giants have learned to exploit the power of platforms … to gain footholds as the modern-day equivalents of the railroad, telephone, and electric utility monopolies of the late 19th and the 20th centuries"* (Plantin et al., 2016: 14-15). Indeed, when it comes to journalism, Google and Facebook are increasingly replacing the traditional distribution systems of the press, TV and radio that, in France, have been run or heavily subsidized by the State since the end of World War II.

At a socio-technical level, the "dual logic of platformization" is an ongoing process comprising *"social media platforms' expansion into the rest of the web and, simultaneously, their drive to make external web and app data platform ready"* (Helmond, 2015: 8). In other words, while platforms become ubiquitous by decentralizing their features (e.g. the proliferation of Like and Tweet buttons in news websites), they also massively absorb platform-ready data from a wide range of actors including news producers and publishers (e.g. content formatted for Facebook's Instant Articles or Google's AMP). This deepening process is intrinsically asymmetric since it subjugates a multitude

of individual users, non-profit organisations and firms in competitive markets to a few transnational oligopolistic players within the internet industry.

At a micro-economic level the concept of platform entails the hybrid nature of companies such as Google and Facebook as both firms *and* markets. Indeed, their business models rely on multi-sided markets whose efficiency is maximized by algorithms that bring together different groups such as internet users, advertizers and content or service suppliers. Thus, platforms provide strong incentives for these groups through investments or subsidies that result in oligopolistic control:

> If these subsidies and/or investments are well designed, powerful network effects and economies of scale can lead to a situation in which the appeal of one side of the market is strong enough to capture the entire market on the other (Rieder and Sire, 2014: 6).

Platform studies primarily draw upon media studies and software studies and sometimes upon economics and business studies. But some authors also emphasize links to critical political economy (Nieborg and Helmond, 2018; Nieborg and Poell, 2018). The latter generally refer to Srnicek's influential work: "… our framework is grounded in critical political economic thought by adopting a decidedly historical and normative perspective on 'platform capitalism' (Srnicek, 2016)." (Nieborg and Helmond, 2018: 5).

Indeed, Srnicek's (2016) critical and convincing argument on platform capitalism is informed by international political economy. Nevertheless, the type of information that transits through platforms are seen as secondary to the infrastructure: financial data, commercial transactions, journalism, job vacancies and even industrial products are all seen as subject to similar mechanisms and effects.

Scholars such as Helmond, Nieborg and Poell, inspired by Srnicek, pay more attention than him to cultural products. However, their approach is not completely satisfying. By stressing "the medium-specificity of platforms as programmable and extensible technical systems that enact institutional relationships through software" (Nieborg and Helmond, 2018: 5), they certainly put forward a novel analytical framework that can be useful for the political economy of communication in the digital age. Nevertheless, even though they wish to finally focus on "the autonomy of cultural producers and the kinds of content these producers can distribute through platforms" (Nieborg and Poell, 2018: 7), in fact they mainly investigate the digital affordances rather than the content of contingent commodities and their related editorial decision-making. In other words, from our point of view, these works underestimate the dual nature of cultural products as both 'commodities' and 'ideas' that is central to the political economy of communication.

Back to the cultural industries approach

These types of considerations have since long been central to a particular approach that has developed within the political economy of communication, known as "the cultural industries approach" (Hesmondhalgh, 2013) or "the cultural industries school" (Winseck, 2016). It aims to articulate the specific characteristics of different cultural goods (books, sound and video recordings, press, cinema, broadcasting) with the analysis of different types of value chains in cultural production. More exactly, as "French exponents of the cultural industries school have also been influenced by the *filière* tradition of industrial economics" (Fitzgerald and Winseck, 2018: 87), they conduct "industrial channels analyses" - that "share several common points with analyses based on value chain theory in that they rely upon a perspective that extends beyond the strict framework of

the firm or the sector". The purpose is to "bring to light certain transformations affecting content, the organization of production, distribution, and consumer access, as well as the role of actor strategies in these transformations" (Ménard, 2014: 82).

Thus, considering that different kinds of cultural goods can be correlated with specific types of industrial channel, this approach understands the cultural industries in plural terms and identifies the different socio-economic models that emerge within them. Miège (1987) offers a typology based on what he calls the *social logics* at work (Mosco, 1996). These include the editorial production of cultural commodities (e.g. books, sound and video recordings) and the flow production of audio-visual content (e.g. broadcasting). These logics form two generic socio-economic models: on the one hand the *editorial model* - concerning long-lasting cultural goods that are sold directly to consumers and whose industrial channel is characterized by the central position of the publisher/producer; on the other hand the *flow model* - concerning production and distribution of ephemeral cultural goods that are not bought directly by consumers but funded through advertising (or via taxes in the case of public service broadcasting services). The program planner/scheduler is at the centre of the latter's industrial channel. Traditional press situates itself in between these two models as it can be funded by both readers and/or advertizers and generates hybrid products that vary from lasting (e.g. special edition magazines) to ephemeral (e.g. daily newspapers). The most important function in the industrial channel of the written press is that of the publisher who makes editorial decisions that shape and decide the newsworthiness of a current event.

In a similar way, digital media developments can be analysed through the socio-economic models of the cultural industries approach. As mentioned before, one main development concerns the central position that internet companies occupy between the supply of and demand for news:

> The self-proclaimed general 'disintermediation' of markets hides new forms of 're-intermediation', with new agents that have emerged from the digital environment. On the Internet, portals, search engines, content providers and service providers (ISPs) concentrate and orientate the mass traffic, but also assume new functions of packaging and commercialization (Bustamante, 2004: 808).

Since Bustamante's insights, the power of these new intermediaries has increased substantially. This trend points to the formation of a new socio-economic model in the news media industry where the central function is occupied by infomediaries.

The infomediation of news

The idea of infomediation was developed in the late 1970s by Canadian researchers Fitzpatrick-Martin and Valaskakis to analyse the increasing role of technological mediation in society and in the economy [1]. At the time, the idea of the 'post-industrial society' or 'information society' was very much in vogue in reference to the exponential increase in the quantities of information produced and exchanged. However, Fitzpatrick-Martin and Valaskakis thought that the main issue was not the amount of information available, but the way in which computers replaced humans in organizing and giving meaning to it. For Valaskakis (1982), this issue was deeply political, as he felt the emergence of infomediation on a large scale would ultimately upset the distribution of power in society and the economy.

Hagel and Rayport (1997) analysed the business model of infomediation from a micro-economic perspective. According to them infomediaries create value by matching, through the use of

accumulated data, an available supply with the customers most likely to acquire or consume a given good. This idea was taken up and extended by Pierre Moeglin (2007) in his proposal for a new socio-economic model within the cultural industries approach, that of *information brokerage* (or 'courtage informationnel' in French). Driven by widespread access to networked computing, these services sort through a wealth of digital information and cultural content to provide users with a selection matching their expectations and tastes.

The general result is a mass personalization of cultural and information consumption. In this configuration, infomediation goes beyond traditional publishing by taking into account consumer preferences that become less dependent on publishers' decisions or broadcasting schedules. Yet, infomediation does not limit itself to distribution since it also organizes information. Indeed, such services hierarchize digital content through proprietary blackbox algorithms and thus generate complex sets of signifiers that make sense for humans in their social and political context. As such, infomediation has quickly taken a central place in the industrial channel of online news (Smyrnaios, 2015). Drawing on the cultural industries approach, we can analyse this trend by incorporating the various interrelated dimensions of a model – in this case, the information brokerage model – articulated around the activity of infomediation. These dimensions can be summarized as follows:

- Type of content: Contrary to the written press and broadcasting, where information is supplied inside a coherent product such as a newspaper or a television program, digital content proposed by means of infomediation is modularized in the form of individual units. These might include an article, an image, a sound or a video extract associated with metadata that can be rearranged in many different combinations and accessed through different pathways (e.g., a list of Google results, a series of links shared on Facebook, a selection in a news app).

- Funding: Personalized advertising, including sponsored links, 'native' advertising and programmatic display ads, is dominant but some subscriber services exist in the form of news apps (e.g., Apple News+).

- Production: While a supply-driven logic has long governed the news industry, journalists and publishers tend to increasingly take demand into account through metrics that offer them insights into the supposed desires of the public.

Hence, a coherent articulation appears in between the modularisation of digital news, personalized advertising and customized supply. Each of these dimensions can vary depending on whether the infomediation essentially rests on algorithms. Thus, Google often limits the modularisation of information to excerpts and images that are algorithmically arranged. Alternatively, infomediation may also incorporate social interactions between internet users (e.g., Facebook offers recommendation systems – likes, comments, shares), or be organized around ad hoc applications (e.g., Apple adds subscriber services and micro-payments). Overall, the infomediaries occupy a central place in the industrial channel of online news, at the expense of publishers (Rebillard and Smyrnaios, 2011).

Infomediaries' relationships with publishers can be described as *coopetitive*; that is, they are both cooperative and competitive (Belleflame and Neysen, 2009). The cooperative component, which takes the form of legal, technical and financial agreements, is justified by their common interest in expanding their respective markets (e.g. the creation of the Digital News Innovation Fund by Google). But at the same time, the interests of these two kinds of players diverge when they are in competition for market share, notably in advertising.

For some time now the advertising market share of infomediaries has increased at the expense of publishers. However, the latter are still required to employ journalists in order to provide news. This professionally produced news material, alongside with user generated content, forms a huge and heterogeneous amount of information that calls for selection and hierarchization from infomediaries. In such a configuration of *coopetition*, the political economy of online news becomes more and more unbalanced: the cross-subsidization system that economically sustained the production of original news by professional media (e.g., the popular sport section of a newspaper supporting more expensive investigative journalism) is shattered because monetization becomes attached to individual pieces of content and the revenue is shared unequally with infomediaries.

Drawing on these elements we propose that infomediation is an operation that can be performed by different kinds of organisations in various contexts. At least three characteristics are relevant here: 1) such organizations occupy an intermediary position between an abundant, fragmented but also standardized supply of information and an individualized demand; 2) they are a means for selecting and prioritizing third-party content that involves algorithms and socially produced data that define editorially meaningful ensembles of information; and 3) they are constituted by a business model which mainly depends on data collected from users for marketing and advertising purposes and secondarily on commissions derived from transactions between publishers and consumers.

Our definition of infomediation has numerous common features with platformization, which, in the context of journalism, is defined as entailing "a shift from an editorially-driven to a demand-driven news production and distribution process, in which content is continuously modulated, and repackaged, informed by datafied user feedback" (Poell et al., 2017: 10). However, our perspective differs on at least two points.

First, drawing upon the cultural industries approach applied to the field of news media, our theoretical framework focuses upon the maldistribution of political power inside the public sphere. In the contemporary situation, this problem derives from the capacity of dominant Internet players to shape public opinion by forming alliances and even 'capturing' media and public authorities through various means which are not limited to technology (they include direct funding of media or political players, 'revolving doors', lobbying etc.) (Nechushtai, 2017). As a result, 'captured' organizations may become subservient to the interests of the companies they are supposed to scrutinize or regulate.

Second, we insist on the editorial dimension of platforms that – notably when it comes to news distribution – not only produce socially, semantically and formally coherent products but also play a role in selecting and offering visibility to certain contents at the expense of others. Transposed to an empirical level, this means that studying the technical affordances of platform-sized commodities is necessary but not sufficient. A supplementary analytical layer must be added to take into account the kinds of content infomediation platforms tend to favour and the reasons why. In a previous work, we conducted a semi-automated discourse analysis showing the predilection of infomediation services such as news aggregators and portals for redundant and mainstream news (Smyrnaios et al., 2010). In this article, we will focus on socio-economic factors that structurally determine editorial decisions on the long term, in order to make "a radical reassessment" of infomediation platforms' role in society. This will provide "an appreciation of the responsibilities that accompany the power that they have acquired." (Naughton, 2018: 389).

Empirical observations and findings

As we have already noted, the current situation of news infomediation has largely been documented within the United States and the United Kingdom. The situation in France shows some differences but also several resemblances. Extremely revealing, for example, is the expression 'building your house on someone else's land'. This metaphor was used by publishers in the US to describe the migration of their content towards platforms (Bell and Owen, 2017: 36). A similar observation was made by a French journalist in our own study:

> Snapchat possesses the house and we are more or less renting a room in that house and we try the best we can to make it to our taste and to have many people come and knock on our door. But we do not own the house (Jean-Guillaume Santi, Chief Editor of the Snapteam [2], *Le Monde*, 24 November 2016).

Drawing on such a parallel we think that the situation in France can shed some light on the global stakes of news infomediation. Moreover, a diachronic analysis can be provided thanks to in-depth interviews we conducted on this topic throughout the last fifteen years. These interviews took place from the early 2000s, mainly in 2003-2004, as part of Smyrnaios' PhD research (2005). They have been followed up in 2006-2008, 2011 and 2016, as part of three publicly funded research projects led by Rebillard [3]. In total, 51 interviews have been re-examined for the purposes of the present research. Two thirds of the interviews were held with people on the publishers' side (31 interviewees), including representative organisations such as the main national online publishers' union (GESTE – Groupement des éditeurs de services télématiques et électroniques), and one third with people on the infomediaries' side (18 interviewees). In addition, two interviews were conducted with representatives of a regulatory authority (Conseil Supérieur de l'Audiovisuel).

The majority of the people interviewed on the publishers' side come from the written press (dailies and newsmagazines websites, press agencies, journalistic start-ups centred around textual content). The interviewees of the infomediaries' side mainly belonged to companies which specialized in algorithmic infomediation and to a lesser extent in social and applicational infomediation, except for a few start-ups. However, we had the opportunity to interview representatives of one of the most prominent infomediaries, namely Google, on multiple occasions. Similarly, we were able to interview at different periods representatives of some of the major French news organizations such as Le Monde, Les Echos and AFP and some smaller but innovative start-ups such as Rue89.

From a methodological point of view, the interviews were semi-structured and lasted from 45 minutes to an hour. Our informants were mainly managers in the editorial, marketing, technology, legal and strategic parts of the organizations. Being part of different research projects, the interviews were transcribed at different moments but were subject to a new process of open coding and translation by both authors for the purpose of this article [4]. Of course, being gathered in different research contexts, our empirical material is not completely homogeneous because, for instance, the questions asked were not exactly the same every time. Nevertheless, the main themes that we covered throughout our different interviews were identical (editorial strategies, professional practices in newsrooms, revenue sharing and commercial agreements, legal litigations, product development and management etc.). This enabled us to obtain an overview of the interactions between a large sample of actors through a significant period of time.

Taken together, the collection and analysis of this material allows us to apprehend news infomediation from a socio-historic perspective that reveals its main configurations (Elias, 1975) in a dynamic way. In other words, our analysis does not limit itself to the present situation but also takes into account the paths that have not been pursued during the formation of a new industrial channel for online news over this period. Such a perspective can provide a critical understanding of the articulations between the interests of various social actors that are forged around the stabilization of news infomediation (an incremental yet still conflictual, process) (Siles, 2011).

Divide and rule

The current situation is characterized by the dominance of a small number of infomediaries, positioned at the centre of the market which tend to impose their conditions on news producers (Nielsen and Ganter, 2018). They especially control the allocation of resources within their respective networks. Facebook for example can encourage news producers to invest in the new services it offers such as live video or Instant Articles, and then exploit the audience that these generate through its own advertising department (Nechushtai, 2018). This kind of situation is not structurally new with respect to what we have been able to observe in France during the fifteen years of our research.

Compared to the mid-2000s, the number of infomediaries in a dominant position has increased. We are currently in an oligopolistic situation when it comes to news infomediation involving essentially Apple, Facebook, Twitter, Snapchat and Google (the latter has long been in a quasi-monopolistic position). This transition from a quasi-monopoly to an oligopoly on the infomediation side should have reduced infomediaries' market power. However, their dominance persists because publishers remain divided. This fragmentation on the publishers' side is the result of competitive relations between different media but is also maintained and even aggravated by infomediaries themselves.

Indeed, Facebook avoids multilateral relations with professional organisations that represent various publishers in favour of bilateral relations with each of them (Nielsen and Ganter, 2018). Google has previously followed a similar strategy. For instance, in the mid-2000's Google refused to implement ACAP (Automated content access protocol), a method that provided rules to search engine crawlers and machine-readable permissions for content (as elaborated by professional organizations such as the World Association of Newspapers (WAN), the European Publishers Council (EPC) and the International Publishers Association (IPA)). Instead Google successfully pushed its own standard, Sitemaps for Google News, taking advantage of the fact that many publishers didn't support the strategy of their own industry representatives.

In France, the dominant algorithmic infomediary of the 2000s has long avoided negotiations with the news producers. It even benefited from publisher's lack of common strategy when it launched the French version of Google News in 2003:

> Some publishers have understood the threat posed by Google News, namely the risk of Google making money on the backs of journalists and publishers. And they were right. But others, like Le Nouvel Observateur, had a different vision. They thought that it was an opportunity to generate more traffic for their sites (Franck Poisson, CEO of Google France, 12 July 2005).

Based on these divergences, Google managed to reach an agreement with some publishers that were selected because they were considered essential. For instance, in 2007 Google signed "a

commercial agreement" with Agence France-Presse (AFP) (Eric Scherer, Director of analysis and strategic partnerships, AFP, 5 October 2007). The objective of the deal was to avoid legal litigation, following AFP's lawsuit for copyright infringement against Google, but also to improve duplicate detection on Google News by using AFP's database as a reference:

> What has allowed us to reach an agreement with them was that we had an interest in getting a better visibility of the news agency's articles, because they are very often copied on a lot of websites, which substantially deteriorates the user's experience (Yoram Elkaïm, Head of Legal, Google, 19 July 2011).

Thus, Google took the decision to directly pay a news organization (AFP) for the second time in its history, the first had been Associated Press in 2006 upon a similar deal. Moreover, the terms of the agreement were kept secret so that other publishers would be discouraged from making similar claims. Orange, the main telecom operator and Internet access provider in France, implemented the same selective strategy towards publishers when the company developed an infomediation service called 24/24 Actu:

> There is a negotiation taking place between us and our partners, there are a number of them of whom we know that they have a bit more value than others, they attract more users […] and we are willing to compensate them. Some others had slightly smaller claims and we simply found an agreement with them on traffic sharing (Laurent Eskenazi, Project manager, 24/24 Actu, Orange, 29 June 2011).

Today, we see a similar selective strategy being employed by Facebook in the context of social infomediation. This has the double benefit of avoiding publishers forming a coalition while optimizing the functionalities of infomediation services. Indeed, as in the United States, Facebook paid a small group of prestigious content producers (TF1, Le Monde, Le Figaro, Le Parisien) in order to build a critical mass for Facebook Live videos and Instant Articles in France (Becquet, 2017). The idea behind this is to create the most attractive storefront possible and to convince other news producers to adopt these services but without financial compensation. Instead they are asked to share their advertising revenues with Facebook. On the same logic, several French media denounced the arbitrary decision of Apple to exclude them from its applicational infomediation service Apple News while other publishers were maintained without any justification (Girard and Saviana, 2018).

Revenue and data sharing

Advertising remains the main source of revenue for news infomediation. In comparison, commissions on single payments, once promoted at the level of an entire publication by Apple in its App Store, or more recently tested at the level of individual articles by OneMoreTab in France, remain low. Moreover, Apple too has shifted its focus to advertising revenues with Apple News, even though the company announced in March 2019 a new subscription service that gives access to 300 selected publishers within the app. Launched around the same time, Facebook's Instant Articles and Apple News both propose the same partition of advertising revenue, with 70% for the publisher and 30% for the infomediary (Moses, 2015), if the latter commercializes the space through its own advertising department. In this regard, these two new cases seem to be inspired by Google's practices.

Indeed, in France, Google has proposed for several years a bundle of infomediation and advertising services to publishers, thus becoming indispensable to small start-ups like Rue89 as

well as big media groups like Lagardère. In the mid-2000s, a top manager in the Lagardère group, one of the largest magazine publishers worldwide, already anticipated that his company would be an *"ant"* compared to the *"elephant"* Google. He also added at the time that media organizations had invested in human resources and technologies in order to improve their search engine optimization (SEO) and better exploit these new channels of distribution to the point of "enslaving themselves to Google." This was seen to occur because the latter possessed important technological expertise in terms of digital advertising:

> It's not our job [sponsored links]. Our job is rather to invest in order to understand our client's needs and adapt our offer (Julien Billot, Head of Digital, Lagardere Active Media, March 2007).

However, this prerogative was also challenged by infomediaries, as the dual logic of platformization grew (Helmond, 2015). We refer here to the "dual logic of platform expansion and decentralized data capture … which encompasses a platform's 'outwards extension' into other websites, platforms, and apps, as well as 'inward extension', with third-party integrations that operate within the boundaries of the core platform" (Nieborg and Helmond, 2018:7). This ubiquity of infomediation platforms results in a kind of omniscience over supply (knowledge on which organization produces which content and when) but also over demand (knowledge on which user is consuming what information, where and when). Indeed, French publishers at an early stage were confronted by what they called 'confiscation' of data about their readers' preferences. In 1999, a Paris-based start-up called Net2One launched a personalized newsletter that provided a selection of news from different publishers and tried to monetize its database of subscribers:

> Net2One was absurd. They built up a small database and they tried to sell it to competing newspapers. They said if you want to have a list of people who have all checked Les Echos as a source of info we can sell it to you. It's a rogue behavior (Philippe Jannet, Chief of Digital, Les Echos, 4 December 2003).

At the time, French publishers easily managed to stop a small infomediary such as Net2One from 'confiscating' their client's data. But the problem is entirely different when it comes to powerful oligopolistic players. According to a representative of the main national online publishers' union:

> There is something else that is quite annoying and that happens more often, it's that we lose clients' information ... in the Apple Store if you download the application of a news publisher, it won't have the same information as when you subscribe or buy content directly to it ... Apple is in charge of its subscriber database (Guillaume Monnet, Legal Counsellor, GESTE, 20 July 2011).

This trend continues today. Only publishers that are closely connected to infomediaries, such as Le Monde with Snapchat, can obtain specific data on users' behaviour:

> We know whether people read the entire issue or not, we know whether they are swiping to read the articles, how much time they spend on each article, we know how many people access the issue, all these quite detailed statistics on user behaviour within the application, which allows us to come up with the best headlines and to improve those numbers (Jean-Guillaume Santi, Chief editor of the Snapteam, Le Monde, 24 November 2016).

However, this user data is not the most strategic from a commercial point of view. Personal data enabling the identification of users leading to an interaction with them around a news item are now channelled directly to the platform. As such, infomediaries increasingly capture publishers' prerogatives.

Content formats

Most services developed by the infomediaries since the mid-2010s aim to keep the users inside their own perimeter where content takes the form that is imposed by each platform. A study from 2017 on US news sites shows that publishers have rapidly adopted these services, publishing almost as much "native (residing on platform) posts" (on Apple News, Facebook Instant Articles, Instagram Stories, Snapchat Discover, etc.) as "networked (driving audiences back to websites) posts" (Bell and Owen, 2017: 28). It is hard to predict whether this trend will continue, and especially whether the news producers that were subsidized by Facebook to publish in its native formats will continue to do so if and when this financial incentive stops. Nonetheless, the simple fact that many publishers have allowed freely supplied content to be hosted directly by the infomediaries, indicates a noteworthy and unexpected development in the paths that are being considered by the online news industry.

It should be remembered that at the beginning of the 2000s, next to the growing omnipresence of Google, several other big actors from the ICT and telecommunications sectors launched competing services that selected news from several news producers and aggregated them. But the logic was entirely different. Aggregation did not happen entirely automatically but was supervized by human editors. Also, different portal owners had different strategies for keeping internet users inside their perimeter. Here, much depended on the degree to which their business relied on advertising revenue:

> Ultimately, our goal is to keep the internet users with us as much as possible, but that's normal (Jérémie Clévy, Editor-in-Chief, AOL France, 25 June 2003).

> We don't have the same strategy as AOL at all. […] For us, the internet is freedom, people go where they want to go. […] For us, wanting to keep the internet users with us and channel them towards specific content would be the opposite of the philosophy of the internet (Cyril Poidatz, CEO, Free, 4 May 2004).

A crucial element that should be taken into consideration here is that publishers agreed to provide entire articles for these portals and aggregators but only after an official deal was struck involving financial compensation or traffic sharing. Moreover, the portals handled distribution whereas newsworthiness and hierarchization were essentially defined a priori by publishers. The latter provided a ready-to-publish news wire accompanied by metadata in order that content could be channelled to users through infomediaries. This was different from the approach of Google News. At the time, they automatically indexed and aggregated content, but only in the form of excerpts and photos accompanied by links that redirected users to the original source. In most cases, there was no formal permission or agreement with the publishers. Also, it was Google's algorithm that independently combined and hierarchized content based upon its own criteria. This resulted in the mixing of images and texts from different sources, something that provoked strong reactions from publishers.

In the years that followed, circa 2006-2007, an important change took place. The news producers themselves started to adapt their content formats *for* infomediation services which also

increasingly took over hierarchization. This aligns with the more general trend towards platformization mentioned earlier. Indeed, the dual logic of platformization does not only consist in the omnipresence of platforms, it also involves the tendency of online publishers making their data platform-ready (Helmond, 2015).

In the case of news content, this means that media organisations adopt technical formulas which are either standard, such as XML, or imposed by oligopolistic players, such as Google News sitemaps or AMP, in order to provide infomediaries with the opportunity of republishing their content more easily. One of the most prominent publishers in France, more than a decade ago, was already very conscious of the fact that, by extracting content from the print lay-out and reallocating it to 'categories' and 'sections' tailored for the web, the goal was to "reverse-engineer the newspaper": thus, publishers should "leave behind the framework of the newspaper and completely think digitally" (Jean-Charles Falloux, Web Production Manager, Les Echos, March 2007).

During the same period, one manager of a large media group planned to transform its company into a *"brand factory"* (Julien Billot, Head of Digital, Lagardère Active Media, March 2007). The brands of subsidiary newspapers, magazines, radio stations and television channels would be publicized on all types of devices. But this strategy did not anticipate the decline of media brands and the rise of platform brands (Pew, 2017). This particular trend is explicitly evoked by an infomediation start up in France:

> The brand becomes less and less important. Also to people. It's less the case that they read Libération, or that they read Le Monde. That's less the case today. People don't have this strong feeling of brand loyalty anymore (Pierre Tisserant, CEO/co-founder OneMoreTab, CEO Articly, 8 November 2016).

Organization of production

The infomediaries do not limit themselves to the downstream level of distribution. They also increasingly act on the upstream level of production, by framing the practices of journalists; not only by providing them tools (e.g. tracking software for monitoring audience engagement), but also by giving them direct recommendations for how to do their work (e.g. training sessions on the use of Google Trends, 360-degree video, data visualization, security, etc.). Since the mid-2010s, this branch of the infomediaries' activities has been formalized, through the creation of dedicated units. For example, Google News Lab was launched in 2015 and the Facebook Journalism Project in 2017.

This type of collaboration would have been unthinkable a few years ago. Instead, we should remember that, in 2003, no news organization – and no journalist – was ever notified about the launching of the French version of Google News. The service was managed directly from Google's headquarters in Mountain View, CA independently from the local branch of the company, and consequently without any willingness to have a dialogue with local publishers:

> Simply put, me as a country manager, I did not have the scope to manage Google News. Google is not a hierarchical organisation. In other words, you don't have a real boss by country that manages everything: marketing, press relations, sales and support. It's what we call a matrix organisation (i.e. local management is mainly operational, focused on customer relations, but products are launched and managed directly from headquarters) (Franck Poisson, CEO of Google France, 12 July 2005).

Four years after Google News came to France and despite publishers' complaints, the situation had barely changed when we interviewed Google's representatives in Paris (Yoram Elkaïm, Legal officer Google Europe, Philippe Etienne, Communication consultant, Olivier Esper, Director of public relations, March 2007). None of them had any control over Google News' French version. Decisions about the service were still taken directly from Google's US headquarters by the team of Nathan Stoll, the product manager. Stoll's team only had rare contacts with French publishers, solely through the minutes of meetings between Google's local managers and publishers' representatives of the GESTE. At the time, French expats at Mountain View, in Google's headquarters, were often consulted on the French version of Google News (e.g. on which sources should be included). They seemed to have more influence over that matter than managers of the company in France.

The relations between infomediaries and news producers were thus non-existent at first, then very distant and exclusively concerned with technical and commercial aspects. However, slowly but surely, a greater proximity developed that was reflected in the growing influence of the infomediaries on journalists' professional practices. The latter were first made aware of the importance of making their articles more visible in reference to algorithmic infomediation (through SEO: search engine optimization) and later to social infomediation (through SMO: social media optimization). In the beginning, this growth of awareness was organized by the publishers themselves, employing a large variety of methods as we found in our interviews with several media representatives in 2006-2008. Some news organisations hired SEO-experts or community managers, not necessarily integrated into the newsroom, or they called upon specialized companies for outsourcing these tasks. Other publishers used more informal and "artisanal" methods, involving advice, tips and tricks between colleagues for writing better headlines for their articles. There were even some journalists among those interviewed at the end of the 2000s who did not understand the meaning of the acronym SEO. Subsequently, Google took direct charge of consulting and training in order to improve publishers' audience performances and advance monetization:

> We have been invited not too long ago, a few weeks ago, to a training at Google ... They showed us their new products, their updates, their servers, in particular an advertizing server that allows you to integrate different offers and to push different advertizements depending on what will bring us the most money (Laurent Mauriac, CEO, Rue89, 22 June 2011).

As far as the content is concerned, the influence of infomediaries was indirect up until recently. The changes were at surface level (e.g. using certain terms instead of others, depending on which ones were at the top of the trending topics on Twitter or Google Trends) or, on the contrary, in the code (e.g. inserting specific metadata into HTML). But soon the influence of infomediaries pervaded journalistic practices to the point of representing a much more substantial change that touched upon the heart of the profession; namely, editorial decision-making related to topics, angles and formats. In some cases, journalists even "pitch" stories to infomediaries staff members in order to know if they are suitable for a specific platform (Rashidian et al., 2018). In a sense, this is what the head of Le Monde's Snapteam finally admits:

> We don't have the pretention to arrive on a platform and think we know everything about that platform when we've just gotten there. So they tell us, I don't know, that in order for people to continue reading further into the edition, there is a trick like this or that. And so sometimes we test it. [..] What is important is that, when it comes to the

editorial content, we always have the final cut. But of course, they give us advice on how to adapt that to the platform. And we are very receptive to that (Jean-Guillaume Santi, Chief editor of the Snapteam, Le Monde, 24 November 2016).

This case observed in France confirms that the infomediaries have a direct and profound influence on journalism: they are changing the professional habitus of journalists and condition their behaviour (Tandoc Jr and Maitra, 2018). In a way infomediaries are taking over the role of the news organisations as an instructing party and as a reference. More specifically, in the mutation of the industrial channel of the press, infomediaries increasingly take charge of important prerogatives that were once the exclusive privilege of publishers. Thus, they largely define both the economic value of news and the visibility of ideas that are contained in them.

Concluding remarks

The preceding insights confirm the view that the hold of infomediaries on news publishers is becoming more decisive as the former shape editorial decisions and the ways in which journalists operate daily. This trend combines with two similar developments that we have examined. On the one hand, infomediaries no longer settle for advertising revenue sharing, they also deprive publishers of an important resource, that of user data. On the other hand, infomediaries impose full and comprehensive integration in terms of formatting as well as directly hosting the content.

The different stages of these developments have become more visible thanks to the diachronic perspective adopted in this article. This perspective confirms that there is undeniably a trend towards the dominance of the infomediaries over publishers and, simultaneously, a collusion between these two types of actors that leads the latter to dilute their editorial autonomy while the former gain power over news production and distribution. This problem is magnified by the fact that editorial decision-making becomes dependent on the infomediaries' strategies. This gives them an editorial responsibility that was previously entrusted to journalists. Now, infomediaries are not necessarily willing to accept this.

At the same time, publishers lose an increasing portion of their present and potential revenue and so they have fewer resources that can fund original journalism. In France, traditional publishers' online advertising revenue diminished by 2 percent in 2017 compared to 2016 while the overall market grew over the same period: 92 percent of this growth was captured by search (where Google dominates) and social networking (where Facebook dominates) (DGMIC-CSA, 2018). The market power of oligopolistic infomediaries, resulting from several layers of technical, market and institutional influence, is at the core of the problem. It is reinforced by the lack of solidarity among publishers, a phenomenon we noticed before and which was recently demonstrated once again. In 2017, the action directed at the US Congress by the News Media Alliance, a professional organization consisting primarily of print media publishers, was not strongly supported by television and radio media groups and was simply ignored by some journalistic start-ups (Bell, 2017). Such an asymmetric balance of power could be potentially rebalanced by public regulation. However, we observe that intervention by public authorities was very limited in this respect until recently [5].

More surprising yet, regulation tends to be delegated to the infomediaries themselves. This trend was observed in France before it extended to the rest of Europe. On 1 February 2013, an agreement was signed with great ceremony by François Hollande, French president at the time, and Eric Schmidt, Google's ex-CEO. While the initial idea was to tax Google in order to compensate those

media whose content is indexed for free, the result of the trilateral negotiations that took place at the time between the French government, organizations such as the GESTE representing publishers, and Google, was the creation of a fund for digital innovation in the press funded by Google (Finp: Fonds pour l'innovation numérique dans la presse).

Thus, the discussions that involved a sovereign government and organisations representing tens of publishers on the one side and a dominant infomediary on the other resulted in a significant modification of the institutional arrangement which determines the framework of journalism's funding. The political nature of the agreement is confirmed by the decision Google had meanwhile taken to invest in a new research centre in France dedicated to artificial intelligence. And, these announcements were made amidst litigations between the Californian firm and French fiscal authorities as well as mounting anti-Google criticism after the Edward Snowden revelations. But the deal signed by French publishers and endorsed by the government came with an important trade-off: Google obtained the right to oversee funding and thus privilege projects and publishers compatible with its own strategy. And the European version of the fund that was later created, the Digital News Innovation Fund, operates with a very similar approach (see Nechushtai, 2018). Thus, Google controls directly a significant part of the funding of European media in addition to its other means of influence, a situation which is endorsed and encouraged by public authorities.

The developments that we have examined throughout our study demonstrate the necessity of linking the different dimensions that form the environment of contemporary journalism. Our conceptualization of infomediation, inside the general framework of the cultural industries approach, allows for a deep understanding of the combined articulations of the political and financial context, the socio-technical dimensions of platforms, the internal socio-economic logics that guide news production and consumption as well as the latter's content and nature. Infomediaries occupy the central position in this new arrangement for the industrial channel of the press. This trend exemplifies the capacity of a handful of oligopolistic technology firms to increasingly acquire political and economic power (Smyrnaios, 2018).

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Endnotes

[1]   For a genealogy and a more comprehensive definition of the notion of infomediation, see Goyette-Côté in Rebillard et al. (2011).

[2]   Within Le Monde's newsroom the Snapteam is a unit dedicated to Snapchat Discover.

[3]   Research projects : *Diversité et mutations des industries culturelles et médiatiques* funded by the French Ministry of Culture and Communication (2006-2008); *Internet, pluralisme et redondance de l'information* funded by the French national research agency (2009-2012); *Enjeux socioéconomiques de la diffusion d'informations d'actualité sur l'internet* funded by the French Ministry of Culture and Communication (2011-2016). The authors thank Marc-Olivier Goyette-Côté and Andrea Wagemans for some of the interviews conducted in 2011 and 2016 respectively.

[4]   Through a thematic discourse analysis approach, we inductively identified the main features that arose from the interviews by detecting patterns and regularities, then comparing them to secondary data (financial data, audience statistics etc.) and publications including industry ones. This allowed us to put them in perspective according to each particular period.

[5]   In March 2019 the European Parliament adopted a new directive concerning copyright rules for the internet. This directive notably contains an article that aims at providing "publishers of press publications […] for the online use of their press publications by information society service providers". However, it also stresses that such a protection "shall not apply to acts of hyperlinking" even when the latter are accompanied by "individual words or very short extracts of a press publication".

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