

Content recommendation, a challenge for television

Recomendación de contenido, un reto para la televisión

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Abstract

In this article, we use the term recommendation in order to analyze every apparatus aimed at guiding the Internet user toward a specific content, surrounded by an overabundant and profuse offer. For the purpose of the analysis, we distinguish four types of recommendation: on the one hand, editorial and contributive recommendation, based either on experts or users' judgments and opinions, and on the other hand, aggregative and personalized. The latter appear to be more and more central, based on users' online behaviour. With the algorithmic recommendation, alleged, declared or observed users' preferences form the material of predictive recommendation in apparatuses developed by different operators of legacy media. This step is the almost final one in a process of delinearization and individualization. However, despite its efficiency, this form of recommendation raises a number of questions. More than the risk of confinement and filter bubble, the biggest problem seems to be related to the oligopolistic power of a few players, controlling consumer behaviour data.

Key Words: Recommendation - Television - Prescription - Algorithm - Contribution

Resumen

En este artículo, utilizamos el concepto de recomendación con el fin de analizar los diferentes sistemas y dispositivos destinados a guiar al usuario en Internet hacia un contenido específico, en un contexto de superabundante y profusa oferta. Metodológicamente, para el análisis se distinguen cuatro tipos de recomendación: por una parte, las recomendaciones de carácter editorial y contributivas, basadas respectivamente en los juicios y opiniones de expertos y usuarios, y por otro lado, las realizadas mediante agregación y personalización. Estas últimas, basadas en el comportamiento en línea de los usuarios, son cada vez más relevantes. Con la recomendación algorítmica, las preferencias de los usuarios, presuntas, declaradas u observadas constituyen el fundamento de la recomendación predictiva en los dispositivos desarrollados por diferentes operadores de medios de comunicación tradicionales. Este paso representa el final de un proceso continuado de desintermediación e individualización. Sin embargo, a pesar de su eficacia, esta forma de recomendación plantea una serie de cuestiones. Más allá del riesgo de quedar confinado en la burbuja de los filtros, el mayor problema parece estar relacionado con el poder oligopólico que ejercen algunas empresas sobre el control de los datos del comportamiento del consumidor.

Palabras clave: Recomendación - Televisión - Prescripción - Algoritmo - Contribución

After the model of the funding of media by advertising, the principle of an “attention economy” has frequently been raised since the beginning of the 2000s; it describes the challenge of capturing a rare resource, namely the ability and time availability of a user for accessing informative and cultural content on the Internet. This principle can be traced back to the first analyses of Herbert A. SIMON, defining the scarcity of attention as a central challenge in an environment of abundant information: “In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.” (SIMON, 1971: 40-41) Since the development and mass public use of the Internet, the range of content has appeared increasingly abundant, whereas the demand remains limited by time and attention. Different media formats, such as the printed press and audio-visual materials, are affected by growing difficulties (ANCI AUX, 2014; CAGÉ, 2015; FARCHY, MÉADEL and SIRE, 2015) in maintaining a business model based on two sided markets (EVANS, 2003; ROCHET et TIROLE, 2003; EVANS et SCHMALENSEE, 2005).

In the field of audio-visual media, this issue of the abundance of contents offer meets the question of delinearisation, itself facing the central characteristic of programming work, consubstantial with the publication of linear channels. One of the recognised functions of television channels is in deed to choose and publish a certain amount of content, to schedule it over the course of a certain period (afternoon, *prime-time*, weekend, etc.). Without meaning death of linear television, delinearised consumption of audio-visual content is more and more becoming, under its different modalities, a growing component of supply and demand.

Delinearisation, if it involves a new management of the consumer’s schedule, leaves the operators with two choices: that of the catalogue itself and of guiding Internet users to the heart of a given catalogue. These catalogues are in effect subject to different recommendation apparatuses, which follow distinct processes, methods and tones, aiming to promote the consumption of content and to maintain the user close to an operator over time. Here we use the term recommendation

in a broad sense, including all devices aiming to guide Internet users to a specific piece or set of content.

After having recalled the importance of recommendation for the actors of audio-visual industry (1), we propose a cartography (2); this leads us to analyse four main forms of recommendation: editorial (3), contributive or aggregative (4), and personalised (5), which are, each in their own way, challenging for audio-visual businesses.

The work is based on the examination of various French digital apparatuses, allowing access to audio-visual catalogues, and on interviews carried out in 2015 with ten strategic leaders¹ working in the main French television groups (the public broadcaster France Télévisions and the private broadcasters TF1, M6 and Canal+), the main Internet service provider (Orange) and a head of a media conglomerate (the Lagardère group).

1. An imposed figure: the injunction of recommendation at the core of a new audio-visual economy

In recent years, many access routes have been developed for digital materials. In these new access markets, a multitude of digital actors positioned themselves offering legal or illegal models², coming from professionals (notably VOD³) or amateurs (UGC, *User generated content*). Some of these operators have the legal status of providers (YouTube), and others of publishers (Canal play, Orange, Netflix, etc.); they offer video on demand services, transactional (per unit) or by subscription, they give access to catch-up television or they provide video sharing capabilities⁴. According to CNC statistics, the penetration rate in France for catch-up television⁵ rose from 54.3% at the end of 2010 to 72.6% in the second quarter of 2014⁶; paid VOD (rental of content, purchase or subscription to the service) rose from 18.5% in 2009 to 33.1% in 2014⁷. This consumption in France often passes through the mediation of television (with its *triple-play* offers), particularly for paid VOD⁸.

Without forgetting that the practices of users are far from matching the offers established by businesses and that usage is in no way near matching the consumption of the players' forecasts, we examine in this article the dynamics and strategies implemented, seen or planned by the providers of audio-visual content.

Actually, the function attributed to or asserted by publishers has been partly transformed by restructuring of the market. New players (among which the multi-national platform Netflix is certainly the most emblematic) have created supply, bypassing the potential barriers to entry in publication and distribution of television channels. For linear television companies, competition for end users in the content distribution market has increased. This competition has been established in two ways, contributing to the decreased profitability of business models. Firstly, the time available to consumers of content and programmes is potentially fragmented between the propositions of a very large number of players. Secondly, particularly for paid television, beyond their attention, there is also the consumer's willingness to pay, which may change in favour of new offers, which involve fees for purchasing or renting, or subscriptions. In these circumstances, the "legacy" players in television are incentivised to adapt their services, if not change drastically.

From an economic point of view, the recommendation facilitates the matching of the supply and demand in the markets of prototypes, in which strong information asymmetries exist. Its main objective is to make offers, which may be considered logical by the consumer, in order to encourage a purchase or rental through paid platforms, or for free platforms to increase the audience of the site, a source of advertising revenue. This recommendation allows ARPU⁹ to be increased and maximised in the case of the consumer not looking for specific and given content.

In France, most television groups have developed digital content catalogues, following diverse payment structures, forms and strategies, linked to their initial position and know-how in the audio-visual field (commercial or public television, free or paid television). The competing offers on the market are notable for having a diverse range of relatively important players, including the sole component of paid content.

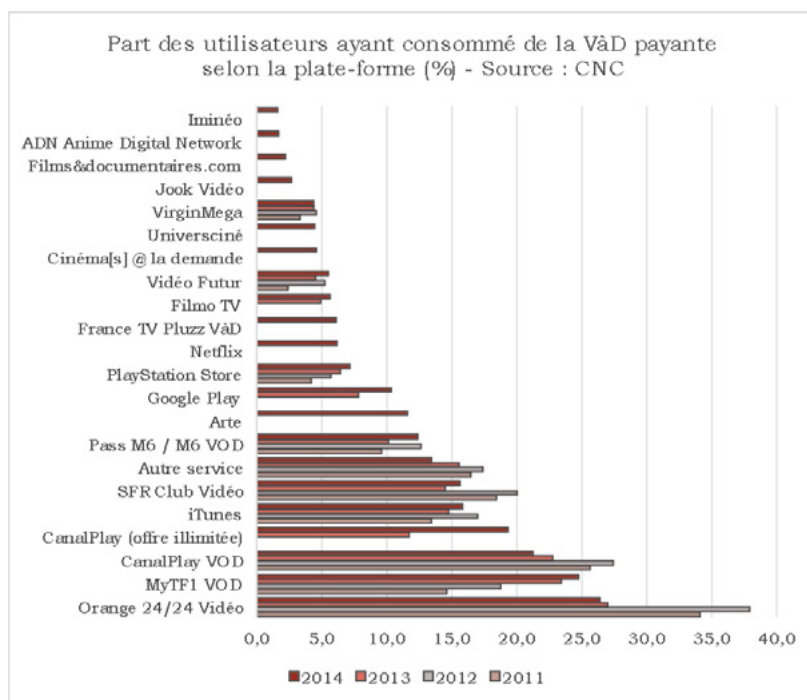


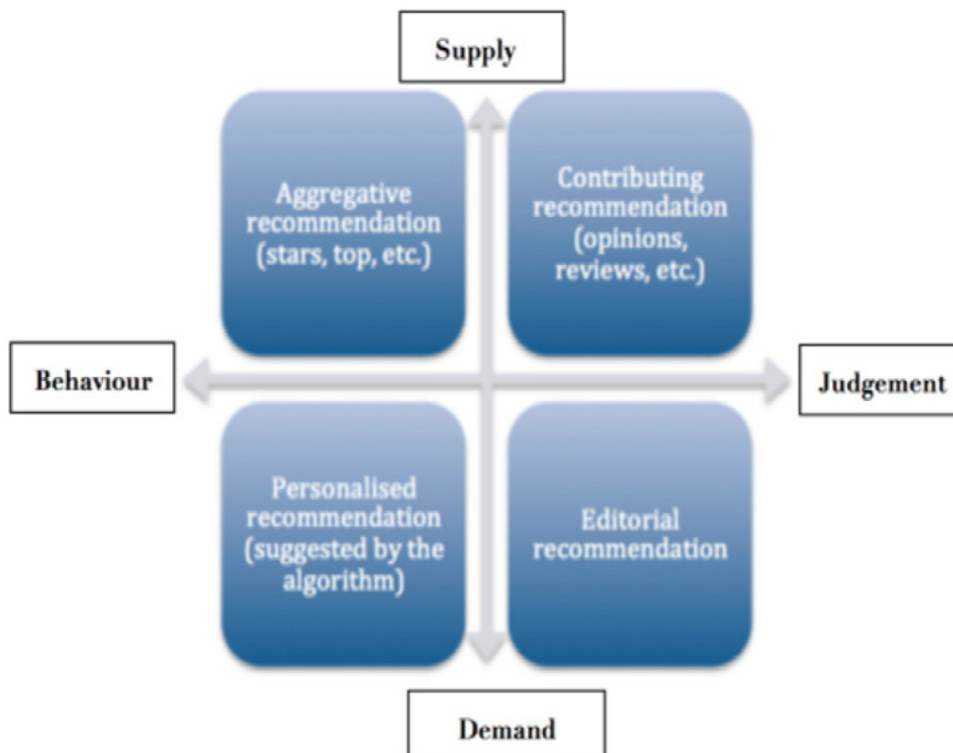
Figure 1: Proportion of users having consumed paid VOD according to the platform.

Diagram: in 2014, 26% of paid VOD users used the Orange platform, 2.5 % used the Iminéo platform, etc.

2. Cartography of the multiple recommendation devices

In terms of recommendation, a three level construction, presented by many involved actors, has been published by Éric SCHERER (2015: 25): “In access control, the editorial programming will continue, especially to move away from the noise of the abundance of content, to contextualise and aggregate content which will have trouble surviving alone. The public no longer wants more choice, but easier access to content and works of relevance, and in the simplest way possible. However, on the virtual sofa, faced with the tyranny of choice, social recommendations will also lead this new on demand consumption with the search, as well as the recommendations of the algorithms”.¹⁰

Beyond these ideal types, numerous apparatuses combine automatic tools and human treatment, and the respective importance of the difference forms of recommendation varies depending on the apparatuses planned. These may be viewed in a cartography based on two axes of definition. The first axis contains the apparatus depending on its proximity to the supply or demand: at one extreme, entirely “industrial” production and at the other those from consumers or users. However, the conceptions and constructions of supply and demand are often intertwined; thus the recommendation of a series consumer on the site of a broadcaster is indeed a production from demand, but largely pre-constructed, supervised or evaluated by the broadcaster. The second axis contrasts the subject of the recommendation, according to which an assumed judgement is expressed or reflecting a behaviour to capture. For recommendation modalities can thus be distinguished: editorial, aggregative, contributive and personalised.



Graphic 1

3. Editorial recommendation in a delinearised and personalised world

We call editorial recommendation the specific proposal of a specific content or clusters of content based on the clear mention of a choice made by the company on the apparatus – or at least an accepted and recognisable mention of this choice. The editorial function (professional reviews, marketing productions, etc.) is often distinguished from a more or less automated function (specific suggestions, algorithmic approach, etc.). In other words, the company highlights or explicitly selects content, in the same way as it could do on a broadcast channel, and it constructs a certain number of statements for the user.

The construction of the editorial recommendation is the direct, almost natural extension of one of the functions traditionally attached to linear television channels, that is the control of programming mechanisms, aiming to gather the largest number of television viewers for a piece of content during a given period (in the case of free commercial video financed by advertising) or to increase the satisfaction of television viewers with regard to the content offered (in the case of paid video). From the control of the planning of time slots with specific content, the creation of unmissable event recognised by consumers, and the eventual pursuit of the accumulation of an audience valued on the advertising market, the function of these players changes – at least in part – towards the establishment, management and promotion of a catalogue of videos, available for a defined period of time, and susceptible or not to exclusivity.

3.1. Extending identification with a brand

In different forms and to different extents, the studied apparatuses are constructed as an opportunity for businesses to renew the presentation of their know-how in the field of programming, with certain proposals of their own, or reminding users of their identity within the apparatus. This form of interaction with the consumer has been highlighted as essential in the majority of interviews, as one of the major points for potential distinction from the competition.

Beyond the visual environments and common content, this editorial recommendation allows the consumer to be maintained in an established relationship with an operator. Thus, these particular apparatuses benefit from brand visibility and recognition, and editorial lines, types of programming and content directly associated with a group (notably in the case of TV shows). The observation of the apparatuses used and the interviews have shown a clearly marked link between the programming expertise, the editorial position and the presentation of the catalogues.

The example below of a catch-up television apparatus shows the direct, paroxysmal link between the content offered and the channels (whose linearity is reproduced here to show the content). At the same time, a presentation of certain particular content is made (“Our recommendations”) without the criteria for choice being made explicit to the consumer.



Figure 2: Extract from the homepage of the francetvpluzz catch-up television website.

MONOGRÁFICO

This recommendation may equally be constructed based on more editorialised categories, showing a form of selection which may correspond to the images and programming lines associated with the channel or group. This recommendation may be made in conjunction with the content (as in the example of MyTF1 Vod where it can be seen that there content is grouped not by genre but by a sort of theme, or even atmosphere with titles like “These English are crazy” or “Sex without inhibition”, which may cover series, films, studio productions, etc. The recommendation may also appeal to other references or other types of grouping such as, for example, a suggested selection of films with an actor or actress.

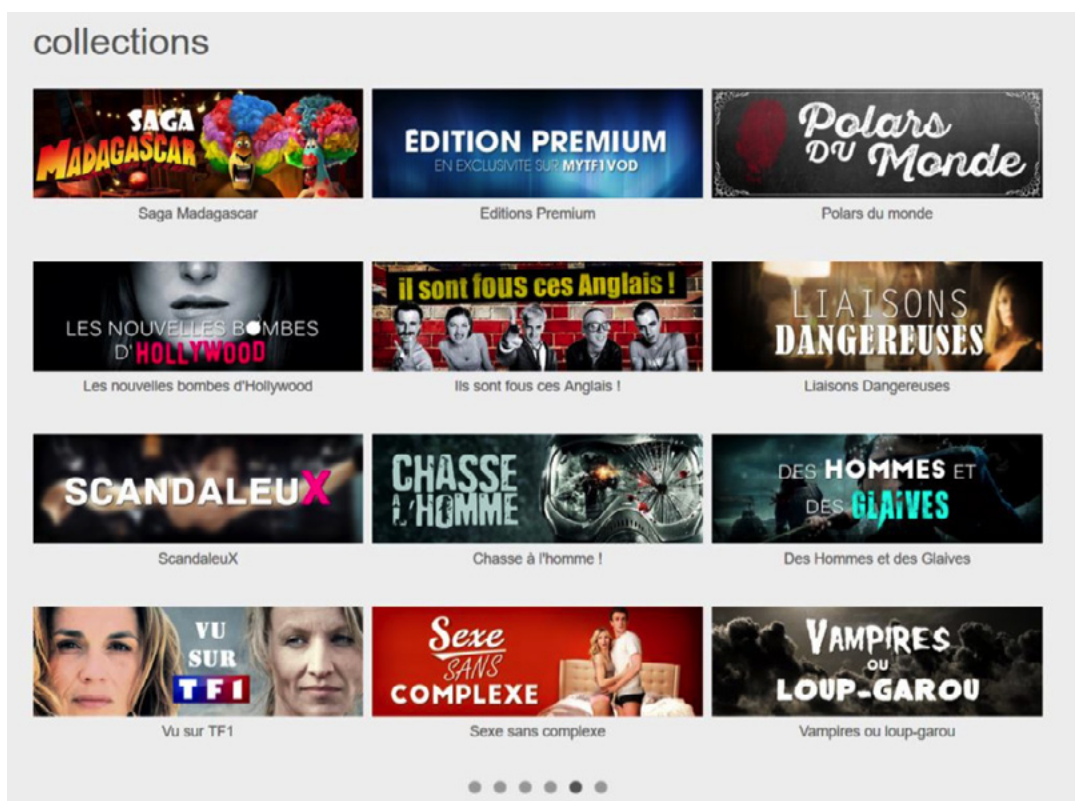


Figure 3: Extract from the homepage of the mytf1 vod website.¹¹

In this context, if the importance of editorialising has been recognised and highlighted during the interviews as a way to guide the consumer, it does not make immediate sense in terms of purchases or rental of content. In the case of one of the

apparatuses studied, the observation of the paths of the consumers mentioned during an interview shows that the direct impact of these editorialised recommendations only concerns a limited number (5%) of uses. However, the importance of these presentations is defended as significantly contributing to the overall environment of the service offered, notably for the cinematographic content. Thus, this editorial recommendation appears to professionals as a means for improving the overall quality of the apparatus, as the consumers perceive it, even if they only have a limited appeal.

Canal+Group (a subscription based pay TV) proposes in a particular model of editorial recommendation, notably in the form of selections constructed around themed groupings. An apparent distinction is made between the pay per unit VOD service, notably marked by rough categorisation by genres and the mention of “best picks”, whereas the subscription VOD service is marked by the presence of a more extensive editorialising, with selections made on the editorial plan¹². The latter are justified by the will to defend and promote a particular relationship between the group and cinema, notably at a national level. The editorial recommendation thus contributes to the qualitative representation of content offered, unlike suggestions which are only algorithmic.

3.2. The difficulty of establishing aspecific expertise

Beyond recommendations supporting the brand of the business, it is possible to observe several more developed editorial interventions, presenting the catalogue in a particular way (information on the world of the creator, in-depth themes, etc.). Thus, the establishment of specific channels may constitute a significant enrichment in the offer of themed content: at the heart of its 6Play catch-up television, the M6 group has developed several clusters of content, following identified themes (fashion, food, property, etc.), notably with recognised personalities, present on the group’s channels.

The choice of editorialising is also retained by a certain number of independent players, whose catalogues are accessible on the website or on certain *set-top boxes* and offers from Internet service providers. The example below shows the possibilities of an editorial recommendation, with factual elements on the film, a summary and critical elements at the same time, from a clearly identified and recognisable columnist.

MACBETH

VM | HD | TOUS PUBLICS | 108 MN | 2015 | DRAME

Note de Sens Critique : **6.3 / 10**

RÉALISATEUR : Justin Kurzel.

CASTING : Marion Cotillard, Michael Fassbender, David Thewlis, Elizabeth Debicki, Paddy Considine, Sean Harris, David Hayman, Jack Reynor, Ross Anderson

SYNOPSIS : 11ème siècle - Ecosse. Macbeth, chef des armées, sort victorieux de la guerre qui fait rage dans tout le pays. Sur son chemin, trois sorcières lui prédisent qu'il deviendra roi. Comme évoqués par la prophétie, Macbeth et son épouse montent alors un plan machiavélique pour regner sur le trône, jusqu'à en perdre la raison.

SCÉNARIO : Jacob Koskoff, Michael Lesslie, Todd Louiso.

MUSIQUE : Jed Kurzel.

PAYS : France | Royaume-Uni | Etats-Unis d'Amérique

TAGS : Drame, Nouveautés, Achat défilatif, Shakespeare dans tous ses états, Des chevaliers, Passé anglais, Films HD.

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VOIR CE FILM

1mn **2mn** Les avis internautes avec **SENSCRITIQUE** **6.3 / 10**

MACBETH n'est que le deuxième long métrage de l'australien Justin Kurzel après des débuts très remarqués avec **Les crimes de Snowtown** : un premier film à la violence brute et à la maîtrise évidente. Guidée par un point de vue moderne et une mise en scène très stylisée, son adaptation du classique de Shakespeare lui a valu une sélection officielle au festival de Cannes en 2015.

Justin Kurzel met en avant deux éléments-clés dans son approche du texte : préserver la langue de Shakespeare en tournant le film en vers, et privilégier réalisme et authenticité en filmant en Ecosse. Comme le raconte l'une des productrices du film, "Justin tenait à créer un monde parfaitement crédible et cohérent, et il en parlait d'ailleurs comme d'un univers de westerns. L'aridité du monde de Macbeth fait du paysage un personnage à part entière et, du coup, il était essentiel de tourner au coeur de ce paysage". Le tournage, en plein hiver et en dehors extérieurs, s'est dit douloureux exigeant pour l'équipe du film et pour ses comédiens, confrontés à des

LE CONTEXTE

EGALEMENT INTERPRÉTÉ PAR

PAS SI ÉLOIGNÉ

EGALEMENT RÉALISÉ PAR

DANS LE MÊME GENRE

LA VERSION D'ORSON WELLES EN 1948 A MARQUÉ LES MÉMOIRES.

A VOIR ÉGALEMENT

INGEPTION

CENTURION

EXCALIBUR

Le vent se lève

Figure 4: Extract from the page of the film macbeth on the v&d filmotv site.¹³

The audio-visual companies' attempts at renewal, which lead them to feel out the best ways to arouse interest and make a difference, in reality reflect the apparent contradiction between the principle of the editorial recommendation and the delinearised and personalised world in which these apparatuses exist; in effect new forms of recommendation emerge, *a priori* more adapted to this new environment.

4. The multitude of internet users at the centre of the recommendation apparatuses

Internet users are everywhere active and involved in those apparatuses which encourage, monitor and praise their presence. Since the middle of the 2000s, the promotion of “Web 2.0” has acknowledged the wishes of Internet users, as well as their capacity for creating, manufacturing and reconstructing goods and services offered. If the practices are not usual among Internet users, they are not minor (REBILLARD, 2011). This capacity is certainly based on ancient roots, but it finds new formats and a new domain in the digital environment thanks to the increase of apparatuses encouraging contribution and participation (DUJARIER, 2008). However, the Internet user may be mobilised in speeches beyond their contributions and active and voluntary actions (ASSOGBA, COUTANT *et al.*, 2016), as a central figure in a developing digital economy.

These contributions from Internet users are subject to a largely industrialised framework. The collection and exploitation of information obtained thanks to the “work” of the “multitude” of Internet users (Colin et Verdier, 2012) is at the heart of the digital economy. Users, benefiting from services provided, become volunteer collaborators. This model of free cooperation, which generates the enthusiasm of Benkler (2006) and other economists (as an alternative to coordination by prices, Farchy et al. 2015), is in reality a hybrid and combination of the merchant, the public and the contribution. This free work echoes the theories of “cognitive capitalism” (Moulier-Boutang, 2010), which corresponds with an economy of pollination and contribution. It also echoes the recent critical current, on *Digital Labor*, provided by researches in social sciences and economics who analyse the dimension of exploitation in this work (Scholz, 2013 ; Cardon and Casilli, 2015). Universally, Internet users are thus *at work*; sometimes this work is of such low intensity that the Internet user barely notices himself that he is contributing to a collective work; conversely, sometimes the investment is huge and intense.

A French report from the Ministry of Industry (Colin, 2013) distinguishes three categories of information coming from Internet users: (1) information submitted by the user which is subject to explicit collection for different purposes; (2) infor-

mation observed which result in the collection of traces of use of an application; (3) inferred information deduced from treatment, in particular grouping, practiced by a business from the personal data of its users and clients. Only the first category, that is the information which involves deliberate participation from the Internet user, are active contributions (Méadel, Musiani, Farchy, 2016).

Then, forms of recommendation, based on those contributions, are established not on statements or explicit intervention of the business managing the apparatus, but with spotlighting the Internet users¹³. This involves the incorporation of traditional means of prescribing cultural content (such as word of mouth) allowing better awareness; therefore those products, which remain strongly marked by their experiential nature, gain more visibility, hence instilling a certain confidence.

In these apparatuses, Internet users express complete judgement (DJ axis of the quadrant) or leave some traces, more or less intentionally; in aggregating and analysing their behaviours, the treatment of those various contributions is used to produce specific forms of recommendation (DC axis of the quadrant). In effect, the systems combine “an arithmetic dimension (the aggregation of marks) and an expressive dimension (the free writing of an opinion” (BEAUVISAGE, BEUSCART *et al.*, 2013: 133). On this basis, we distinguish contributing recommendation and aggregative recommendation.

4.1. Contributive recommendations which largely escape audio-visual businesses

In the audio-visual sector, a large part of the contribution activity of Internet users escapes businesses, displayed in personal or collaborative spaces (amateur blogs, Facebook pages about a content, sharing sites, information exchanges, captions, fan forums, etc.).

Most of the apparatuses implemented by audio-visual businesses have opened technical possibilities for receiving contributions from Internet users. However, despite these offers, the apparatuses only receive a relatively small number of contributions. Thus, the apparatus of the Canalplus group, aiming to encourage,

organise the receipt and publication of contributing recommendations seeks to generate contributions, even promising potential financial reward, a sign that these contributions are difficult to obtain. In the audio-visual apparatuses studied, the contributing dimension, while existing, is frequently the result of the apparatus importing opinions from exterior players which are much more efficient in the economy of contribution, such as AlloCiné or SensCritique¹⁵.

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BOUCHE À OREILLE LE PALMARES DES CRITIQUES UTILISATEUR

Vous aussi, proposez vos avis sur les films vod que vous aimez.
Si votre critique est retenue, elle apparaîtra sur la fiche de votre film.

Si votre critique est sélectionnée par l'équipe éditoriale, vous recevrez **UN BON CADEAU DE 5 EUROS**, à utiliser comme vous le souhaitez pour regarder un film ou une série en ligne sur CANALPLAY.

LA CRITIQUE DE LA SEMAINE

La Critique vod sélectionnée de *Stevia*
Pas un nouveau nanar

Le pitch du film pouvait laisser craindre ou augurer un navet ou un sentimentalisme outrancier. Des animaux et du foehn, ou, mais de navets... que nenni ! C'est une bonne surprise que ce feel good movie non dénué d'humour et de malice ; les personnages sont sympathiques, la bande son excellente et il y a une note d'autodérision ou de farce dans la partie convenue ou caricaturale. En outre, voilà encore un rôle sympathique pour Matt Damon (qui ne se taille pas la part du lion, Salomon dans le film). Divertissement tout à fait acceptable pour tout public.

[Proposer une critique](#)

Nouveau Départ
2.99 €
VOST/VF - 118 mn - 2010
De : **Cameron Crowe**
Avec : **Scarlett Johansson, Matt Damon, Elle Fanning**
© 2011 Twentieth Century Fox Film Corporation - LBI Entertainment - Vinyl Films

LES DERNIERES CRITIQUES AJOUTEES

The Walking Dead 1.99 €
Critique de *charity* : Saison 5
Une excellente série : une des meilleures que j'ai pu voir sur ce sujet. La saison 5 est sortie aux USA. Quand sera-t-elle disponible sur Canalplay VOD ?

[Proposer une critique](#)

La Part des Anges 2.99 €
Critique de *saraharas* : **Rafraichissant**
Chouette film sur les vocations, sur la chance à donner à chacun, même à ceux qui ont fait des erreurs. Ce film est à la fois drôle et touchant, les personnages sont attachants. Un message humain et optimiste sur notre monde et sur une certaine jeunesse en perdition.

[Proposer une critique](#)

Figure 5: Extract from the word of mouth page of the canalplay vod website.¹⁶

Thus, the strategies implemented by different players in the audio-visual ecosystem remain largely established on the specific logic of players, and the know-how that they have on their respective position on the market. In other words, the evaluation of the user and the personalisation logic, often evoked, belongs more to a promise enshrined in a socio-discursive and economic context than a dynamic driven by historic players, and embodied in efficient players.

4.2. Frustrated aggregative recommendations

The arithmetic component of the recommendation appears more frequently and systematically in the studied apparatuses. It no longer involves collecting the expressive contribution of Internet users, but information on their behaviour (ratings and stars, likes on social networks, shares, etc.) which do not make sense once aggregated.

The assignment of ratings, stars, etc., allows the consumers' opinion on the offered content to be obtained. It may become visible in the individual presentation of cinematographic content, but also lead to rankings ("viewers' favourite", "best viewer ratings") presented beside similar rankings issued by the press (here directly returning to the dichotomy proposed by AlloCiné). As with expressive contributions, interviews with audio-visual businesses have shown that consumers do not appreciate those apparatuses. A large number of rating systems, that we have studied must therefore, again import and integrate ratings and star systems developed and synthesised by other players, notably AlloCiné. They are largely, like contributing recommendation, subcontracted to specialised external actors.

Unlike editorial recommendation, aggregative recommendation does not really appear as a differentiating element for competition or, according to the players that we have interviewed, as a means of encouraging consumption. In the same way that the opinions and contributions of Internet users sought by AlloCiné are not truly used by the platform in the end (PASQUIER, BEAUDOUIN et LEGON, 2014), those put online by audio-visual companies participate little by little in the renewal of their economic model.

Unlike the ratings with little visibility, the classic presentation of the best sellers on the apparatuses appears as a central method for encouraging the purchase or hire of content. One of the apparatuses observed eliminates different ratings based on evaluations and reviews (press favourite, viewers' favourite), to only retain a central "best selling". If this apparatus may seem particularly frustrated, our contacts indicate that it is through this presentation that most of the consumption is made (used prior to almost 80% of rental in the case of one of the apparatuses, and 90% of

sales in the top 50 new products for certain VOD services). The recommendation in this form clearly indicates the choices of a large number of consumers, beyond the previous popularity of the works.

Overall, the recommendation from Internet user is made in a paradoxical silence: Internet users “listen” to their peers in terms of purchases, but not what they “say” (expressive contributions or stars). In other words, behaviours take precedence over opinions.

5. Personalised recommendation: the effective practicality of the study of behaviours faced with the incompleteness of the catalogues

The technical potential offered by the Internet network and the study of behaviours thanks to big data have led to the emergence of a new form of recommendation. Often qualified as a *recommendation engine*, the notion is associated with the automation of machines and opposed to human intervention. This accompaniment is increasingly sophisticated, mainly focused on behavioural information, allowing the user to be guided to the heart of an abundant supply.

At the heart of numerous discourses, hopes and fears, this form of recommendation is based on the routes and preferences of consumers. It includes the strongest promise of being able to offer them, by different means, content intended to interest them, and also to ultimately improve the real or perceived relevance of the service. We thus qualify as a personalised recommendation all suggestions of content (or groups of content) established on the basis of user information and user path. This is almost the final step of a process of delineation and personalisation, the consumer becoming at once the subject and object of the discourse of the apparatus. The assumed, declared or observed preferences of the users form the predictive recommendation, on the apparatuses industrialised by different operators.

The recommendation firstly consists of the proposal of content linked to those that the consumer is consulting on the basis of their assumed preferences. Returning to a principal successfully developed by the Amazon platform, on the model of “collaborative filtering”, the recommendations are made by comparing the profile of the Internet user with those of other users who have purchased the same product: “Internet users who have bought the book that you are buying also bought these”. This type of recommendation can be found in almost all apparatuses studied, in accordance with degrees of precision and links with the initially consulted content which may vary. The metadata, whether visible or not to users of the apparatus, serve to make suggestions related to the interest shown through consultation of a piece of content. They may be based on the genre of the content, the actors, directors, period, etc., and shown in the form of spaces presented by elements of categories and genres, or interpellations such as “you may also like”, or “see also”.

The declared or observed preferences are shown in the personal database gathered within or around the apparatus. Firstly, the consumer is encouraged to declare a certain number of elements (objective information such as age, gender, civil identity, household composition, or subjective information such as content and genre preferences, etc.), so that part of their use is organised for them, and from accessing the apparatus, a registration is generally required. The responses to some questions allow segmentation of use to be established, obtained in a fun, quick way (Netflix offers a simple choice of images). Secondly, information is collected thanks to the observation of the consumption path, in order to determine the behaviour which can be attributed to the consumer or different members of the household, etc.

The power of the personalised recommendation essentially rests not in the individual judgement of the Internet user, but in the collective behaviours of all users. It is known that deviations between the user’s declarations and their real behaviour are common. Thus, a study on the users of a video on demand rental site in Australia compares the films that users really put on their wish list and those that they really watch. For example, it shows that individuals would like to watch documentaries or auteur films, but in reality they consume films which have had

great public success (Milkman, Roggers, Bazerman, 2009). As Dominique Cardon (2015) summarises: “algorithmic logic attaches itself to what individuals do, very conservatively considering that they rarely live up to their desires. Preferring their behaviours to their aspirations, the algorithms impose this efficient realism upon us” (p.70).

The efficiency of the personalised recommendation rests more on the fact that it allows the paradox of incomplete supply to be resolved; that is the finiteness of the catalogues faced with the promise of unlimited digital supply. In effect, although marketing discourse developed around the launch of digital video from the 2000s have promoted the idea that consumers would have access to all the content that interest them, when and where they wish, paradoxically, the supply of on demand video, and notably those which are for subscription, are established on rights restricted catalogues (due to competition, partial agreement with rights holders, exclusivity logic, and certain regulations, etc.). Therefore, personalised recommendation limits the attention and search of the consumer to the only preferences corresponding to the rights held by the operator of the apparatus.

As the heads of the platforms have explained to us, the aim is to highlight content to the user, the user not being able to obtain sufficient interesting content from the catalogue *a priori*. The challenge may be summarised as follows: imagine a consumer with an interest in one thousand films, and a subscription platform which has the rights for only one hundred of these films. If the consumer searches for the films which interest themselves, they risk being disappointed nine times out of ten (they will not find nine hundred of the films that interest them, to which the platform does not have the rights), leading to a feeling of dissatisfaction. The challenge for the platform and its catalogue is thus to suggest, one after the other, each of the one hundred films of interest to which they have the rights. In both cases, with or without personalised recommendation, the ultimate usefulness for the consumer, the number of interesting AND accessible films, remains the same, but their perception may be changed in the second case. In other words, the recommendation must allow a significant enough offset to be organised to cause an output from the apparatus, between the promise that the consumer will be able to find everything that they wish and the realisation that the catalogue on only respond to a certain and limited proportion of their wishes.

Conclusion

Towards hybrid models

Beyond the four recommendation formats identified (editorial, contributing, aggregative and personalised), in most apparatuses, judgements and behaviours, industrial logic and contributions from Internet users are all blended together. Thus, in the Zoom application for iPhone launched by France Télévision in 2015, the user firstly indicates their areas of interest on their smartphone (culture, sport, games) and the programmes that they do not wish to watch. The public channel then suggests to them, for viewing on the mobile telephone, themed playlists of its own programmes whose selection is progressively refined based on the behaviour of the consumer.

For providing recommendations, even in an algorithmic form, apparatuses are marked by a preliminary qualification of content and users which may not be fully automated. Among these are firstly categorisation, generally carried out by genres (whether by flux or stock content), with different degrees of granularity or grouping new items and those added most recently and based on a certain number of keywords and metadata. The production of metadata for categorising content is subject to specialisation from certain players, such as the company Plurimédia which offers the creation of digital guides, for example providing images and videos, and trailers, summarised in formats compatible with apparatuses of audio-visual businesses. The information from AlloCiné is metadata obtained then formatted by Plurimédia.

The qualification of content is the object of other players such as Netflix, with intense internal activity. With a position of reference, the quality of its recommendation service is often evoked by analysts or professionals, as well as promoted by the company itself (TRYON, 2015). Thus, Netflix announces – without the real figure being known – the fact that 75% of content viewed by its clients come from a personalised recommendation from its engine. Available in France since 2014, the service is frequently mentioned as an example of the commercial supply of a catalogue of videos accompanied by an algorithmic recommendation of content.

However, the apparatus offered by Netflix is more of a hybrid than it seems, as it combines an automated algorithmic recommendation and a human intervention for qualification of content and users. The precision of the micro-genres categorising content illustrates the mosaic of marketing targets and the desire to improve the experience of each user. No less than 77,000 “genres” have thus been classified (Madrigal, 2014) such as “violent thrillers about cats for 8-10 year olds”. This qualification involves the viewing of each piece of content by a company employee who after having tagged its components will propose a precise categorisation, likely to match the behaviours of users¹⁷. Furthermore, the power of the economic model of the platform is not linked to the single technical power of its algorithm, but to the intensity of the data collected on the users themselves.

Towards markets restructuration

The algorithmic recommendation at the heart of the suggestions targeting the preferences of consumers, their habits and consultation histories, despite its efficiency, raises a number of questions. Among these, the most usual address the idea of the consumer being confined to the same habits and the associated consequences in terms of cultural diversity. “The algorithm presents certain risks: besides, of course, profiling, confinement to the same tastes, to the detriment of discovery, the temptation to carry out manipulation in order to favour work produced by the publisher, or, a particularly worrying perspective which is today still utopian, the threat of a standardisation of creation which would be dictated by the expectations of the public. These risks to cultural diversity may still be minimised if the algorithms are not exclusively focused on the data provided by consumers, but inspired by the characteristics of works offered, and work on the metadata associated with these works”¹⁸.

The risk of confinement in a bubble (*filter bubble*), (Pariser, 2011) which in the case of the audio-visual sector, which may go so far as to offer each user their own channel adapted to their tastes, according to previous choices, has been a topic of debate since the first works on the subject (Fleder, Hosanagar, 2007). For a long time the Internet’s capacity to allow users to face differing opinions, in other terms, contributing to the nourishing of a Habermasian public space, has been questioned (Turkle, 1997; Sunstein, 2001). This accusation

is also made of Facebook, accused of shutting out the world for Internet users, reducing their world of choices and relationships. Bakshy et al (2015) have also confirmed this tendency to homophily for the social network: by choosing their friends and through the links that they choose to click, Internet users confine themselves in a bubble, the liberals reading liberal information and the conservatives reading conservative information. Thus the risk of confinement (if there is confinement, which is not undisputed) is more due to the behaviours of the Internet users than the filter of the algorithm.

In addition to the risk of confinement, the most significant problem posed by the algorithmic recommendation seems instead to be linked to the lack of know-how and the loss of client relations that this new tool creates for traditional media players. Thus, the *New York Times* and the BBC do not have access to data on their own content circulating on the Facebook network. The largest private French channel, TF1, signed a partnership agreement in 2013 with the social network in order to benefit from the data and tools dedicated to monitoring and analysing the conversations of Internet users on the programmes of the channel. The threat to cultural diversity thus comes less from the great power of the algorithms than from the potential oligopolistic power of a small number of players controlling consumption data. Thus, while such an abundance of audio-visual content has never before been available, the historic players of the sector are at the margins of a vast restructuring of the markets in which recommendation apparatuses appear central. This is not the least of the paradoxes of current developments, which will require, for each player, the testing of forms of competitive differentiation.

Notes

- [1] The majority wished to remain anonymous; we do not mention their roles or directly cite their statements.
- [2] The forms in which audio-visual content is provided without the right holder's authorisation, which raises specific questions, will not be treated in this article.
- [3] Video On Demand
- [4] For a detailed examination of economic activity and legal status, see (Farchy & Moreau, 2016).

- [5] Catch-up TV is generally a service allowing part of the content shown linearly on the channel to be viewed or re-viewed during a certain period after being broadcast.
- [6] "Catch-up television", Statistical resources, CENTRE NATIONAL DU CINÉMA ET DE L'IMAGE ANIMÉE. Last consulted on the 15th of February 2016, at <http://www.cnc.fr/web/fr/statistiques>.
- [7] "Audience of video on demand », Statistical resources, CENTRE NATIONAL DU CINÉMA ET DE L'IMAGE ANIMÉE. Last consulted on the 15th of February 2016, at <http://www.cnc.fr/web/fr/statistiques>.
- [8] For catch-up television, the CNC established estimation for the first part of 2014 of 861.4 million television videos online viewed on computers and 718.7 viewed on televisions. However, for paid VOD, 86.8 % of consumers use a television, while only 30% use their computer.
- [9] *Average revenue per user, the measurement used most often for determining commercial efficiency in relation to consumers.*
- [10] This statement is concluded by an appeal to combine the three types of recommendation in a single apparatus: "The audio-visual web is moving from "search" (one searches but has trouble finding) to "automated push". Which will win, editorial programming, social recommendation, or algorithmic prescription? The ideal would be a combination of the best of the three (publishers, friends and algorithms) combined with the freedom of on demand consumption and the simplicity of linear consumption: in sum a "personalised push"."
- [11] Each selection shows a set of content, preceded by an introduction developed to a greater or lesser extent: "Who laughs last laughs sexy", "Who runs the world? Girls! Especially Jennifer Lawrence, Shailene Woodley, Emma and Blake Lively. Spread the word: a new generation of stars is born", or even "I order you to immediately release this thriller with Daniel Auteuil! Hands on the mouse, NOW, and click very calmly on one of the wonders of the genre... We are moving slowly towards this beautiful collection... They are there in all countries, you won't be disappointed, diamonds, bullions, a treasure from the four corners of the world... EYES IN THE AIR"
- [12] For example, a connection with the Cannes Festival, with which the group is usually associated.
- [13] At the same time, the presentation of a film on the CanalPlus VOD service for example, is succinct, and in addition to the names of some actors and the trailers, has the following summary: "A modern and visceral interpretation of one of the most emblematic and irresistible of Shakespeare's characters, plunging into the heart of the dramatic realities of Scotland at war in the 10th century".
- [14] In reality, the distinction between the two forms is sometimes difficult, as a number of false opinions of consumers on the internet, fed by different merchants or suppliers are shown. The importance of this phenomenon which some place at 10 to 30% of consumer opinions posted on the internet (Reagle, 2015) has led to a work on regulations and labelling in several sectors such as the AFNOR certification in tourism.
- [15] AlloCiné is the French best known website for movies information. SensCritique is a free service which allows its members to note and to classify movies, series, books, BD, video games as well as music. The latter is thus visible in the Figure 4 example, where a simple tab, beside the opinion of the journalist, shows those of internet users who have published reviews on the SensCritique platform.

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- [16] The “review of the week”, on this age in spring 2016, was published on the 18th of June 2014. However on the pages for certain films, more recent reviews may appear.
- [17] A video sharing service like YouTube instead favours not a previous intervention on content, but an aggregative recommendation based on the shares by users (likes, comments, etc.).
- [18] Talk by Olivier Schrameck, President of the Audio-Visual Council at the Tokyo Forum”. 2nd of December 2014.

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