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Threat or opportunity? Cultural diversity in the era of digital platforms in the EU[1]

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Abstract
Digitization results in decisive changes in the value chains of the cultural sectors. The provision and distribution of cultural goods is increasingly organized through over-the-top (OTT) platforms. This leads to the question of how the increasing dominance of platforms impacts the diversity of cultural goods. In interviews with industry experts the tensions arising from the increasing domination of platforms in the sector are explored and its potential impact on the diversity of produced and consumed cultural goods outlined. The paper concludes that additional regulatory measures are needed to protect cultural diversity in the age of digital platforms.

Keywords
Platforms, two-sided markets, cultural diversity, cultural goods, cultural industries.

Resum
La digitalització comporta canvis decisius en les cadenes de valor dels sectors culturals. La provisió i distribució dels béns culturals s'organitza cada vegada més a través de plataformes de lliure transmissió (OTT, per les seves sigles en anglès). Això ens porta a qüestionar-nos l'impacte que té la dominació creixent de les plataformes sobre la diversitat dels béns culturals. En les entrevistes amb els experts de la indústria, s'exploren les tensions que sorgeixen a causa de la dominació creixent de les plataformes dins del sector i es resumeixen els efectes potencials sobre la diversitat dels béns culturals produïts i consumits. L'article conclou que es necessiten mesures reguladores addicionals per tal de protegir la diversitat cultural a l'era de les plataformes digitals.

Paraules clau
Plataformes, mercats bilaterals, diversitat cultural, béns culturals, indústria cultural.

Introduction: a digital cultural economy

In the past ten years the cultural sectors have undergone a decisive transformation. The provision and distribution of cultural goods is increasingly organized through Internet-based over-the-top (OTT) platforms. Platforms mediate between different groups of users in two- or multi-sided markets (e.g. advertisers and readers) (Rochet & Tirole 2006, Parker et al. 2016). Prominent digital platforms include for example Netflix in the broadcasting industry, Spotify in the music sector, Amazon in publishing, and Steam in multimedia, i.e. the gaming industry. OTT platforms are now active in several functions of cultural value chains in addition to the distribution of content.[2]

The impact of the rise of these platforms is fiercely debated in academia and politics (see e.g. Bauer 2013). In the context of cultural sectors one question in particular has to be asked which has so far been overlooked: How is an increasing dominance of platforms impacting the diversity of cultural goods?

Hopes are frequently expressed that digital technology could improve the current situation of creators and the availability of their works to create more cultural diversity. Indeed, content distribution via online platforms has the potential to significantly reduce marginal costs of reproduction and distribution and to lower physical constraints and market barriers. Yet although traditional players in the creative sectors have reacted to the development of online platforms by providing their own platforms, most popular online platforms originate from outside the creative sectors leading to fears of a commercialized mainstream offer. As Evans & Gawer (2016) highlight, only a few EU platforms have a global scale (e.g. Spotify), and the

EU context is one of competition between US platforms (e.g. Netflix, iTunes) and their local EU counterparts.

The relevance of investigating the effect of platforms on cultural diversity lies in the fact that the development of OTT platforms is a pervasive trend in the cultural sectors in the European Union (EU). These online companies are playing a greater and greater role in the economy and in particular in the creative sectors, contributing significantly and increasingly to economic growth in the EU27 (Nielsen, Basalisco, & Thelle 2013). Besides their contribution to GDP, there is political recognition of the growing importance of online platforms for European social and economic wellbeing (EC 2016a). As the European Commission (EC) (2016) outlined, Europe has the chance to be a leading digital player in the world, benefitting from well-developed digital infrastructure, a well-educated population which increasingly uses the Internet, a culture of creativity and innovation, as well as a solid industrial base (EC 2016b).

In order to explore the impact of the rise of digital platforms on the provision and consumption of cultural goods in the EU, the remainder of this paper is structured as follows. First, a theoretical foundation is laid by introducing the paper's understanding of cultural diversity and the concept of platforms. Second, the effect of increasing platformization of the cultural sector and its implications for cultural diversity are discussed theoretically. Third, the insights gained are explored empirically through interviews with industry experts from various branches of the cultural sector. Finally, the results are discussed and a conclusion is drawn.

Theoretical foundation: cultural diversity and platforms

In order to create a theoretical basis for discussion, the following sections look at the paper's two central concepts. First, our understanding of cultural diversity is presented. Subsequently, a brief introduction into platform theory is given.

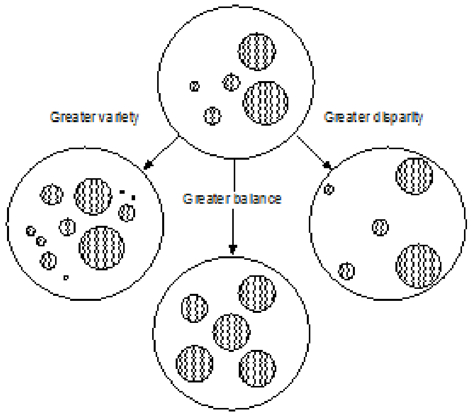
Cultural diversity

It is difficult to assess diversity per se and there is no clearly agreed specific definition of diversity of production or consumption in the media sector (Ranaivoson 2005).

However, the Stirling Model (Stirling 2007) provides interesting insights into how to measure and describe diversity. Accordingly, cultural products can be regarded as elements of a larger system and the system's diversity can be assessed using three basic properties: Variety, Balance, and Disparity.

Individually these properties would be insufficient to describe diversity as all of them are needed to cater for the needs of a full assessment of diversity: 'Variety' refers to the number of categories the elements can be placed in, 'Balance' to the distribution across those categories, and 'Disparity' to the elements' manner and degree of differentiation (cf. Figure 1).

Figure 1. The relation between diversity and its three components



Source: Farchy and Rainaivoson (2011)

It is often argued that diversity is in the public's interest since it ensures the satisfaction of a wide range of preferences and supports the individual's right to have a choice (Ranaivoson 2012). A higher degree of differentiation would increase the overall satisfaction of consumers (Gabszewicz, Laussel, & Sonnac 2002). This results in an argument for the promotion of content diversity, choice, cultural diversity, and heritage, especially in regard to media content (Van Cuilenburg&McQuail 2003).

Nevertheless, Hotelling's (1929) model, often called the 'principle of minimum differentiation', is a popular way of illustrating why it is rational for corporations to provide a 'mainstream' offer instead. As Hotelling (1929) points out, customers will choose the product which is closest to their preferences. As a result, "when a new merchant or manufacturer sets up a new shop [...] there is an incentive to make the new product very much like the old [...] in order to have for the new commodity as many buyers of the old as possible, to get, so to speak, between one's competitors and a mass of customers" (p. 54).

Platforms

Over the past ten years the concept of platforms has received significant attention in design, economics, and strategic management literature. In the meantime, literature on platform theory has become a well-developed and well-accepted part of industrial organization literature (see e.g. Evans, 2014).

Digital platforms

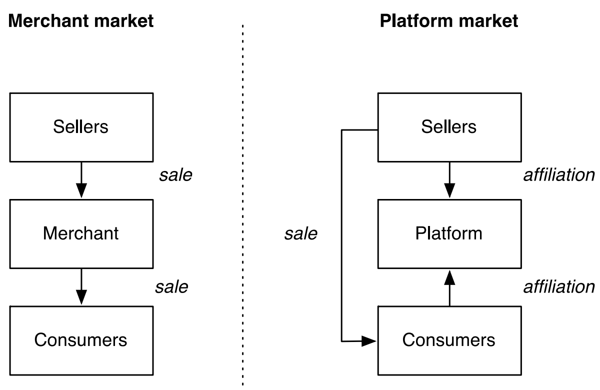
There is no such thing as "a unified theory of [two-sided] markets" and platforms (Bounie & Bourreau 2008, 477). Instead, various definitions and understandings of platforms exist which are usually either technologically or economically motivated.

Technologically-based platform theory when related to the ICT industries conceptualizes platforms as a particular structuring element within an 'industry architecture' (Jacobides, Knudsen, & Augier 2006). Accordingly, a platform may refer to a hardware configuration, an operating system, a software framework or any other common entity on which a number of associated components or services run.

Economically, platforms and their providers mediate and coordinate between various stakeholder constituencies. Platforms differ with their triangular set-up from merchant companies that follow the rationale of linear bilateral exchange. Merchants acquire the necessary complements from an upstream seller and sell the finalized product to a downstream consumer, thus operating in a linear fashion (Hagiu 2007, cf. Figure 2). In contrast, platforms work as mediating entities between upstream and downstream agents such as sellers and consumers. Nowadays platforms are even often multi-sided, mediating between more than two user groups (Evans, Hagiu & Schmalensee 2005).

The (at least) triangular architecture enables platforms to exploit cross-sided network effects: Increasing the number of buyers on one side attracts an increasing number of sellers on the other side and vice-versa (Rochet &Tirole 2006). Cross-sided network effects are a defining feature of two-sided markets (Hoelck&Ballon 2015). These effects enable platforms to pursue a pricing strategy which is not feasible for merchant firms, i.e. cross-subsidization. Concretely, platform companies can charge prices on one side below marginal cost and make a profit on the other side(s) of the market. With this pricing structure platforms can attract additional participants on the subsidized side of the market to foster participation on the profit-making side (Evans & Schmalensee 2007).

Figure 2. The diverging business logic of merchants and two-sided companies



Source: Hagiu and Wright (2015).

In the digital sphere platforms unite elements of both economic and technological understandings. These OTT platforms rely on a technical infrastructure (i.e. the Internet) while they embrace a business model based on a two- or multi-sided market logic, e.g. users, content producers, and advertisers on Facebook (Hoelck 2016).

Importantly, cross-sided network effects can play out in a digital space to an extreme extent. In particular two prominent effects enable OTT platforms to achieve massive market power: First, it is difficult to introduce a new competing platform in a given market since one market side is needed to attract the other side ('chicken-and-egg'). Second, once a platform is successful in this given market, the chances are high that it will dominate the market due to the size of its market share ('winner-takes-all') (Parker et al. 2016). This leads to a tendency towards high entry barriers and concentration in digital platform markets.

Following from this, we conceptualize OTT platforms in this paper as mediating entities that create value through the exploitation of cross-sided network effects by facilitating interactions between actors that operate on different sides of a two- or multi-sided digital market.

Platforms in the creative sectors

The most common case of two-sided markets in the creative sectors is advertising, in particular for broadcasting, publishing or mobile applications.

Taking television as an example, the two categories of users in the two-sided market are on the one hand viewers (but it could be newspaper readers, radio listeners or users) and on the other hand advertisers. Broadcasters act as platforms whose role is to connect both categories of users. The edited and broadcasted content is a joint product, i.e. on the one hand it is content for the viewers and on the other hand it is these viewers' attention for the advertisers. As an example of multi-sided markets, the video-sharing website YouTube is mediating between not two but (at least) three market sides: Users, video providers, and advertisers.

The main peculiarity of two- and multi-sided markets organized around advertising – compared to other two-sided markets – consists in the fact that cross-sided network externalities are not necessarily positive contrarily to the founding example of credit cards. Actually, such externalities are positive for advertisers but can be negative for viewers (Bounie & Bourreau 2008): The higher the number of viewers, the higher the number of advertisers ready to pay to have an ad, yet the higher the level of advertising, the less satisfied consumers may become. There can be differences according to the kind of content (advertising on radio or on television might be considered more disturbing than on the Internet or in newspapers) or the market segment (advertising might be considered as more interesting in specialized media like newspapers directed towards professionals).

This example shows that it is sufficient if one market side experiences positive externalities from joining the platform as long as the benefits of the exchange outweigh the costs of the other market side. As long as the advertiser benefits outweigh the consumers' costs of being confronted with advertisements, the platform will use the possibility of a value-creating exchange (Evans 2014). As a result they have to manage the tension between these actors' contradictory interests. The theory of two-sided markets analyzes this role and the resulting tension (S.P. Anderson & Gabszewicz 2006).

Theoretical discussion: platforms vs. cultural diversity?

The increasing presence of OTT platforms in the cultural sector gives rise to tensions. On the one hand, as intermediaries with the Internet as infrastructure they can provide unprecedented opportunities for making cultural content available. On the other hand, they foster tendencies towards market concentration and high entry barriers. Both claims are investigated in depth in the following sections.

Intermediation: two-sidedness and supply-side economies of scale

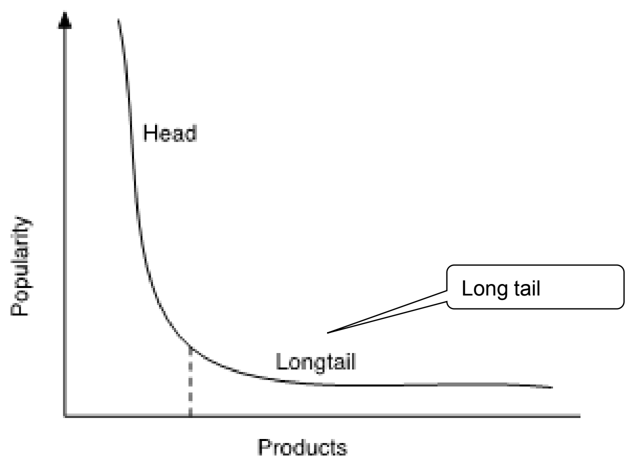
One particular area of investigation of the theory of two-sided markets as applied to the media industries has been the impact of their architecture on content diversity, in particular applied to advertising (Lindstädt 2010).

It can be shown that as soon as advertising represents an important share of a platform's revenues, its contents tend to be homogeneous (Bounie and Bourreau 2008). In the same way Gabszewicz et al. (2001) show that two competing newspapers tend to provide the same political view. Indeed, in this line of thinking it can be assumed that two-sided markets provide a more homogeneous offer than merchant markets (Farchy & Ranaivoson 2011).

These results are only mitigated by the nature of the externality that advertising constitutes for viewers. When viewers are averse to advertising, broadcasters tend to increase the differentiation of their program offer to increase viewer satisfaction (see e.g. Gabszewicz, Laussel, & Sonnac 2004; Peitz & Valletti 2008).

Furthermore, as alluded to in the introduction, digital platforms typically profit from supply-side economies of scale in their market, albeit not in the common sense that their costs fall with increasing output. Rather, due to the peculiar characteristics of digital media products and services, costs are 'spread more widely, thus reducing per-consumer production costs for all participants in the network' (Doyle 2013, 74). Thus, technology platforms dealing with digital products and services have high up-front fixed and low or zero marginal costs: Although it might

Figure 3. Graphical depiction of head and long tail



Source: C. Anderson, 2006.

be costly to produce digital goods and services in the first place, their reproduction and spreading involve no or few additional costs (Hagiu & Wright 2015). Indeed, negligible marginal costs help platform companies to serve and, if necessary, to subsidize huge markets (Parker & Van Alstyne 2005).

However, in this context it is essential to distinguish between supplied diversity and consumed diversity, i.e. diversity as it is supplied by suppliers and diversity as it is accepted by consumers (Van Cuilenburg & Van der Wurff 2001). The analysis of the links between supplied and consumed diversities has been revived with the advent of the 'long tail' theory (C. Anderson 2006). The theory states that digital technology, by promoting a greater supplied diversity, leads to a higher consumed diversity. Empirical applications of this theory, however, focus on Variety and Balance and rarely consider Disparity (Ranaivoson 2016).

Nevertheless, as Ranaivoson (2016) notes there is a clear lack of recent research applied to the EU and ambiguous results regarding whether the long tail effect exists. Indeed, critical voices such as Goel et al. (2010) believe that there is a risk that online platforms' increasing control over access to cultural works may threaten instead the visibility and promotion of marginal cultural works even more compared to the current situation. Others fear limited competition, a claim which is examined in more depth in the following section.

Concentration: the ambiguous impact of market structure

The impact of market structure on content diversity in general is highly ambiguous even before platformization (Van Cuilenburg & Van der Wurff 2001).

On the one hand, there is indeed an opposition between economies of scale and diversity (Dixit & Stiglitz 1977;

Lancaster 1979). Economies of scale exist when fixed costs are large relative to variable costs. This is the case for many creative products. For example, this phenomenon induces video games publishers to focus their efforts on a few games since an increase in their consumption will decrease their average production costs (by unit sold). The opposition between diversity and cost reduction is a standard result in the literature on monopolistic competition, starting with Chamberlin (1933). Findings of this strand of research suggest that in order to reduce production costs, producers tend to provide less diverse products than consumers want. In addition, as alluded to above, economic models show a tendency for competing producers to end up offering standardized products (Hotelling 1929), thus reducing the Disparity of the products. Indeed, producers want to obtain the greatest market share, and to do so they aim to produce the product that best fits the tastes of the average consumer. As such, they fail to cater for consumers with more marginal tastes. As a result, although there may seem to be an increasing variety of cultural goods and services, even more of them target the average consumer and are therefore even more alike. Thus in the case of media, Assogba (2015) argues that having several media companies does not necessarily lead to diversity of news, notably because each media outlet then lacks sufficient means to produce quality content.

On the other hand, economies of scope can also encourage producers and distributors to offer a diverse range of products. Economies of scope can be realized in those sectors where product diversification can be based on the common and recurrent use of proprietary know-how or on an indivisible physical asset (Teece 1980). A diversified catalogue has several assets. It firstly allows companies to follow a portfolio, akin to financial assets (Markowitz 1952). It is also a way to reduce competition: Saturation of the market allows erecting barriers to entry (Curien & Moreau 2005; Lancaster 1979). For instance, museums diversify their activities to face budgetary restrictions; sales galleries and art dealers diversify their portfolio in order to reduce risks. Also for example in the book sector, retailers can benefit from economies of scope which tend to favor the biggest stores, i.e. the ones with the largest, and potentially most diverse, catalogues.

Digitization and the rise of platforms do not make the relationship between market structure and diversity of products less ambiguous.

On the one hand, there is a much greater amount of content available to citizens thanks to democratization of content production, reduction of distribution to an audience that is potentially global, and the constant emergence of new services relying on innovative business models (Masnick & Ho 2014). Such services or new activities are at all steps in the value chain from creation to distribution. A consequence would be greater diversity also at the user level (C. Anderson 2006; Cowen 2002; Peltier & Moreau 2012).

However, digital technologies are likely to threaten traditional media players (creators, intermediaries) to the benefit of players who are not traditional media players (i.e. Google, Amazon, Facebook, and Apple or GAFA as well as smaller players). What is the impact of such concentration? Some authors point out that online platforms' commercial strategies are likely to lead to more homogeneity in content supply and consumption (Guèvremont et al. 2013).

Empirical assessment

The potentially tense relationship between platforms and cultural diversity in the creative sector was further assessed empirically.

Methodology

Our analysis was based on desk research which was complemented by expert interviews. The desk research entailed a review of relevant industry reports, information material, and academic literature. On this basis, the value creation process was mapped. The stages were chosen with reference to the European Commission's Creative Europe Programme and include the whole cycle of creation, i.e. creation, presentation, distribution, and consumption.

The expert interviews were conducted between March 17, 2016, and April 14, 2016. There is no clear guideline for sample sizes of expert interviews; as Baker and Edwards (2012) suggest, the size should depend on the research questions asked, analysis performed, as well as possible practical constraints. In this context, this paper updates and adds to the findings of our desk research with current and first-hand expert knowledge. It relied on pragmatic sampling aiming at an informationally representative sample rather than a statistically representative one. The experts were chosen according to the following criteria:

1. The experts should represent the three main cultural sectors of publishing, broadcasting (TV and radio), and multimedia, i.e. mobile, console, and PC gaming. The experts should be incumbents able to report long-term industry changes.
2. The experts should be active in the three main value-creating stages in the value chains or represent such actors: Creation, presentation, and distribution.
3. The interviews should not be biased towards a certain EU region but should involve experts from the northern, central, southern, eastern, and western countries of the EU.

In total, ten expert interviews were conducted. While the expertise of some experts was overlapping, for each sector at least three expert opinions were recorded (Table 1). The interviews were part of the project 'An Updated Study on the

Table 1. Interview respondents

Function	Sector	Expertise	Date	Interaction
Anne Bergmann-Tahon, director & enrico Turin, deputy director/economist, Federation of European Publishers	Books	Publisher	24.3.2016	Face-to-face
Frédéric Martel – writer, researcher and journalist/radio moderator, France	Books & Broadcasting (Radio)	Creator	25.3 & 4.4.16	Telephone
Lucia Miklasová, head of the licensing department, and Ms Tímea Virágová, interim head of the collective management and international relations department LITA, Slovakia	Books & Broadcasting (TV)	Creators & Rights	30.3.2016	Telephone
Ross Biggam, ex-director general ACT, Belgium, now Discovery, UK	Broadcasting (TV)	Commercial Broadcasters	5.4.2016	Face-to-face
Vincent Sneed, director regulatory affairs & manager, association of European Radio, Belgium	Broadcasting (Radio)	Commercial Radio	18.3.2016	Face-to-face
Wouter Gekiere, deputy head of Brussels office, and Karen Mazzoli, media officer, European Broadcasting Union, Belgium	Broadcasting (TV)	Public Broadcaster	21.3.2016	Face-to-face
Mariebeth Aquino, founder & executive director at Central European Games Conference, Austria	Multimedia	Support network	31.3.2016	Skype
Johanna Nylander, policy affairs, Swedish Games Industry association, Sweden	Multimedia	Developers	23.3.2016	Skype
Jari-Pekka Kaleva, COO European Games Developers Federation, Belgium, and senior policy analyst neogames, Finland	Multimedia	Developers	17.3.2016	Skype
Stan Just, R&D manager, CD project, Poland	Multimedia	Developer, Publisher and Distributor	14.4.2016	Skype

Source: Authors' own.

Economy of Culture – Creative Value Chains' (EAC/04/2015) for the European Commission, DG Education and Culture.

Results

The results from the three investigated sectors are discussed according to the different stages of the value chain. The stages were chosen with reference to the European Commission's Creative Europe Programme and include the whole cycle of creation, i.e. creation, presentation, distribution, and consumption.

Step 1: Creation

In this first step within the value chain of cultural production, the initial product or service offering is created.

In publishing, the author supplies content, which may be written and/or illustrations (e.g. in the case of children's books or comic books). As outlined by the interviewees, while incumbent publishers remain essential for e-publishing, with the rise of two-sided platforms the possibility of self-publishing has become prominent. However, even though self-publishing creates new opportunities for creators, the industry experts emphasized that writers still aim to sign a 'traditional' deal, which involves support beyond distribution such as marketing and financial support. Indeed, traditional players often exploit self-publishing services as talent pools.

In broadcasting, through the rise of two-sided platforms, content producers have gotten access to new opportunities by newly entering content platforms such as Netflix or Amazon Instant Video, which also produce their own content. However, as the experts pointed out, visibility is a major issue just as it is in the publishing industry. As a report of the European Audiovisual Observatory on the visibility of films on VOD in the French, German, and British markets shows, only a small minority (under 10%) of the catalogue is actually promoted, only one-third being European (Fontaine 2015). Most of these films (between 65% and 80%, depending on the country) are recent films (produced in 2014 or 2015). Among these recent films, a limited number benefited from the most visibility: At national levels, the 10 most promoted films account for between 37% and 43% of all the promotional spots. Furthermore, as the interviewees pointed out, creators in broadcasting have also entered into competition with new 'non-professional' creators in the online sphere. Especially on YouTube, it is possible to observe the emergence of channels with massive popularity, mainly among the younger generations.

In multimedia, in this stage the product, i.e. an application or game, is developed. According to the interviewees, creators have gained new opportunities through the availability of a range of new tools and many engines are available almost for free. It has become easier to become a developer; even programming skills are not necessarily required. Additionally, new opportunities have arisen with the possibility to self-publish games. According to the interviewees, crowd-funding websites have made it possible to finance certain types of games and software, thus avoiding dependence on big publishing companies. However, as in publishing many independent developers struggle in this set-up, thus ultimately relying on publishers for marketing and financial aspects. While the sector has therefore become more competitive for developers, the market has also grown in general through the evolution of mobile phone technology and as a consequence provides new employment opportunities. At the same time, games have emerged that require players to be constantly connected due to real-time updates or multi-player features. These applications usually need to be upgraded throughout their lifespan and their development is not finished upon delivery, e.g. Pokémon Go. Creators stay involved with their products for an extended period of time. This sector also has the problem of reaching out to consumers. As indicated by the interviewees, it is, for example, possible to pay for services which increase the probability that consumers will discover certain games through in-platform promotion.

Hence in the end two-sided platforms provide new possibilities to publish content and thus enhance diversity, but only a fraction of this new content becomes visible. In other words, platforms lead to a greater Variety of content producers but with the risk of a lower Balance between these content producers. This leads to a situation where most creators prefer a traditional deal which includes help with financing and marketing.

Step 2: Presentation

In the second step, usually a publisher or content aggregator further processes the product.

In the publishing industry, as emphasized by the interviewees, in addition to the commissioning of books and acquisition of new authors, publishers perform editorial tasks, marketing tasks, and the management of financials. As alluded to above, through digitization authors may bypass the 'publishing' step altogether via direct publishing. Most prominently, Amazon and Apple offer self-publishing services with their digital OTT platforms, namely 'Kindle Direct Publishing' (KDP) and 'iBook Author' in this layer. In addition, as outlined by the interviewees, new digital vanity presses or self-publishing companies like Lulu, JePublie, and BiblioCrunch are sprouting. Interestingly, incumbents, namely retailers (and not publishers), also offer self-publishing services e.g. Barnes & Noble ('NOOK Press') and Borders ('Kobo Writing Life'). As mentioned above, traditional publishers themselves remain highly relevant but largely miss out on this opportunity.

In broadcasting, as the interviewees pointed out, many incumbent TV stations struggle in the new platform set-up. They have started to try to offer their services online by creating their own two-sided platforms. As the interviewees confirmed, these are usually 'catch-up' TV or TV live streams, but also VOD services. Additionally, as the interviewed experts added, these services are often aggregated again. These aggregation offers are often initiated by broadcasters themselves. Examples of such services for television include the platform 'Stevie' initiated by the major Flemish broadcasters in Belgium and '7TV', a platform initiated by the ProSiebenSat.1 media group by bundling its channels in Germany. However, third-party OTT players have also entered the aggregation business. These third-party players earn revenue with additional advertising on these aggregation pages and are often in conflict with broadcasters due to rights issues. An example for such a third-party aggregator in the television sector is 'Schöner Fernsehen', a popular third-party aggregator bundling all German-speaking TV channel streams. Interestingly and as in the publishing industry, distributors such as Telenet in Belgium have also started to provide their own content channels, e.g. sports or children's programs, thus entering into competition with broadcasters.

In multimedia, and similar to book publishing as outlined above, today's developers are not always reliant on publishers. As the industry experts confirmed, the emergence of digital distribution platforms has enabled developers to circumvent publishers and publish their product directly. To give an example, Apple, as the 'founder' of the mobile multimedia revolution, and the current-market leader Google have made direct publishing for applications possible. While in the console domain traditional publishers remain center stage due to the popularity of their proprietary platforms (e.g. Nintendo), for personal computer games it is again a distributer and not a publisher, namely Steam, who is the major player.

All in all, it becomes apparent that new self-services are either offered by OTT platforms or by platforms of distributors which operate further down the value chain and not the incumbent publishers and content aggregators, thus taking the matter of offered cultural diversity away from traditional players and leading to a possible domination of private international OTT platforms with no public duties. Balance between players in this step is at risk with this domination.

Step 3: Distribution

Subsequently, in the distribution step the cultural goods are disseminated.

In publishing, before digitization retail was localized. According to the interviewees, next to some big retailer chains such as Barnes & Noble, this also made it possible for smaller independent bookshops to survive. With digitization and by being able to provide an infrastructure for digital access technology, platforms such as Amazon and Apple have entered the digital distribution of e-books. There are several examples where platforms use their new cross-sided network effect-fueled power position in distribution to limit the diversity of the contents they make available. Notably, Apple pulled 1,500 comic strips from a French digital comic publisher. Comics are a major part of French culture, but the nudity pictured in them collided with Apple's American guidelines.

Also in broadcasting, it is finally again the distribution stage that has started to play an important role in the wake of digitization. Digitization has provided digital TV distributors with a direct customer interface in the form of the Electronic Program Guide (EPG). As in publishing, this has enabled distributors, whose business models up to that point had resembled that of utility providers, to start playing a platform role themselves, thus gaining market power through the exploitation of cross-sided network effects. In Belgium, the distributor Telenet, for example, has introduced its own digital platform 'Yelo TV', while the distributor Belgacom has created 'Proximus TV'. Also, pure OTT players have entered the market. The VOD landscape is dominated by the big three of Amazon, Netflix, and Apple. While players exist covering niche content, multi-homing several platforms comes with a price tag. This becomes significant when users replace their cable licenses with an online service as observed in the USA, which has high cable prices compared to Europe. There already exists a selection of guides on how to 'cut the cord' as well as services at sites like 'The Verge' and 'Slate' which help users to pick services and calculate their savings. Supporting this tendency, live news is increasingly consumed by users via online outlets or via social media instead of broadcasters.

In multimedia, the interviewed experts emphasized that in the wake of digitization, distribution has been totally remodeled. For personal computer games, Steam set a new distribution standard becoming through the chicken-and-egg and winner-takes-all dynamic the de facto monopolistic platform provider for games online. In mobile, platform companies have not only entered the industry but also transformed it profoundly by enhancing the previous standard of operating systems and devices. To give an example, Apple's iPhone with its iOS and App store and Google's Android and its Google Play store are the most popular distribution channels. Also, incumbents have launched their software and app stores, albeit far less successfully, e.g. BlackBerry and Nokia. Indeed, after the failure of its own OS Nokia relies on Google and Windows solutions. As emphasized by the interviewed experts, it is often overlooked that the mobile multimedia industry transitioned into a content industry with digitization. The emergence of app stores led to a massive effort to create mobile games, which are also culturally tailored and often feature certain national characteristics. As in publishing, examples can be found that show how these changes in distribution limit cultural diversity. The interviewees emphasized that while platforms such as Steam allow all kinds of developers and publishers to sell their games, some developers censor themselves following rumored guidelines to ensure acceptance and promotion of their games.

Hence distribution has been most strongly affected by the rise of digital platforms. Indeed, the logic of the supply of cultural goods has been decisively transformed. Distributers played previously only a marginal and passive role in the value chain. Through digital distribution via platforms, which is associated with high entry barriers and concentration tendencies, distributers gained massive market power and became gatekeepers of content. There is a risk in terms of Variety and Disparity of content distributed by these gatekeepers. It is, however, even more crucial in terms of Balance, with these players having much more power and being able to favor some types of content over others. Indeed, in the cultural sectors their bargaining power is not only economic but also enables them to impose their own ethical guidelines for distribution of media content, which in the case of US platforms might not be consistent with European standards.

Step 4: Consumption

Finally, the product reaches the consumer.

In publishing, as outlined in the interviews, the situation has changed significantly for consumers. Digitization has enabled the industry to produce e-books for the visually impaired. Also, streaming for books has started to become a popular solution. As the industry experts stated, next to the prominent streaming service of Amazon, many other players have introduced national solutions such as in Denmark, Sweden, the Netherlands, Germany, and Spain.

In broadcasting, the main trend that can be detected is an increased use of subscription VOD services. Indeed, subscription revenues have almost doubled since 2003 and consumer spending on digital video and VOD of television content increased to €2.7 billion in 2014 (Gröne & Acker 2015). The increase in revenue comes from new OTT platform services as well as from the (digital) TV subscriptions and VOD services of broadcasters and distributors.

For both publishing and broadcasting, streaming via OTT platforms usually means relying on a country-specific differentiation of their service: Depending on the territory, the consumers of these services will access a different set of films. Often, such services will further localize the presence of their different 'branches' by setting up distinct marketing and distribution strategies (De Vinck, Ranaivoson, & Van Rompuy 2014).

In multimedia, the user is more integrated in the process of value creation (Abadie, Maghiros, & Pascu 2008). Digital distribution has made it easy for developers to involve users in the early stages of the value creation process and to receive feedback. As the industry stakeholders outlined in the interviews, the innovation process has become 'viral': Users are constantly engaged and give feedback, which is very different from the traditional 'blindness' to market distribution. The community itself has therefore become an important asset in the digital world that has to be catered for, whether for development or business reasons (e. g. subscription).

All in all the trend is towards a more tailored offer for consumers, e.g. via unlimited subscription offers or an increasing involvement of users. It is questionable, however, whether this can be equated with more diversity. While studies suggest that the offering is in theory broader (with more Variety and Disparity in supplied diversity), consumers tend to stick to a large extent to mainstream products (i.e. consumed diversity remains at best Unbalanced, and possibly gets even more Unbalanced). Hongfei (2016), for example, shows that Netflix's catalogue has in theory more diversity with a greater Variety of titles and genres available compared to traditional players, while a study by Dodson (2016) suggests that the online music streaming platform Spotify does not really lead to more diverse consumption when compared to music purchase (especially in terms of Balance). In this line, Champion (2015) finds that the emergence of multiple platforms for content distribution is increasing the Variety of content being produced by media organizations but leads to high levels of concentration and repetition, hence lower Balance and Disparity. Also, it is questionable whether the diversity 'desired' by customers is offered. The parallel illegal circuit of cultural goods consumption that does not adhere to borders may point towards still underserved audience segments (Ranaivoson, De Vinck, & Van Rompuy 2014). Indeed, often content is made nationally in disregard of potential demand outside the home market due to lacking incentives - the cost and regulatory hurdles of expanding the offer might indeed outweigh the benefits offered to the platform in terms of the cross-sided network effect-based growth of market sides.

Conclusion

The promotion of cultural diversity is of immediate relevance if platforms deal with cultural goods. On the one hand, cultural goods can be regarded as an expression of and a means to transfer culture. On the other hand, a diversity of many expressions is considered something desirable.

Through digitization, cultural content became disconnected from its carrier. The Internet started to become the major infrastructure of the cultural sectors. Although physical carriers in some industries such as publishing continue to exist, the value of content lies nowadays predominantly in the content itself irrespective of its carrier. Thus, while high up-front costs for the production of cultural goods remain, the costs of reproduction decrease significantly to almost zero. As a result, today's cultural goods can be sold online on a large scale at low cost.

Hence it was the value chain step of distribution which became especially prone to platformization. While digitization has favored an increase in the 'Variety' of cultural goods made available online in the value chain creation step, cultural diversity heavily collides with the concentration tendencies and high entry barriers generated by platforms in the distribution step. Digital distributors can quickly gain tremendous market dominance which enables them to act as gatekeepers for content. While national incumbent players are also building their own distribution platforms in this value creating step, new international players in particular are starting to achieve powerful positions. These new OTT players did not previously deal with cultural content and are often private US-enterprises whose foremost aim is profit maximization.

In the end the crucial question is therefore to what extent platforms are willing to ensure that marginal cultural works (e.g. created by young creators, produced by independent producers, or originating from small countries) not only are available but are also promoted in a way that can compensate for their initial lack of visibility. In other words, we have a risk in terms of Disparity (i.e. are marginal works available?) and Balance (i.e. do all types of works get equal availability and promotion?). The platforms' willingness cannot be taken for granted, and this leads to concerns about the representation of culturally relevant and diverse content online. Hence the regulators' approach to platforms is crucial for the cultural sector.

After a long time when there was no platform regulation, the EU is now starting to adopt policy frameworks for the sector and is working on the development of a regulation for platform companies. It is important in this context that policymakers design regulation not only to create an innovative and economically sustainable cultural sector but also to create incentives to protect values such as the preservation of cultural diversity and local or national heritage. In this respect it would be very interesting to analyze how these policy frameworks take cultural diversity into account and to assess their impact.

This paper also leaves open a number of research avenues. One consists in linking questions addressed here with other important aspects in the regulation of cultural industries such as copyright. Our analysis has been performed at the EU level but comparative analysis of some Member States could give insights into how local, established media have so far been able to respond to the development of platforms, and the impact in terms of cultural diversity. In the same way, platforms differ, notably in terms of their business models, and it would be useful to see how their different features may impact cultural diversity.

Notes

1. Acknowledgments: This paper has been written in the context of the study "Mapping the Creative Value Chains; A study on the economy of culture in the digital age" produced for the European Commission, DG EAC.
2. While this paper focuses on digital OTT platforms in the cultural sectors which have not been widely recognized among media and communication scholars, within the cultural sectors there have always been companies that have the characteristics of economic platforms. Although not operating via the Internet, i.e. OTT, which considerably limits their power, these proto-platforms also "mediate" between two market sides. For example, broadcasters create value by mediating between advertisers and viewers.

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