DIGITAL INTERMEDIARIES AND CULTURAL INDUSTRIES: THE DEVELOPING INFLUENCE OF DISTRIBUTION PLATFORMS

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ABSTRACT

The last few years have seen the generalization of a communicative device which is technical and organizational integration of a terminal, an operating system, a network connection, an online platform to access applications (contents and services). Indeed, smartphones, connected TVs, tablet computers and game consoles are structured by this model which develops itself thanks to the rise of computer performance and capacity telecommunication networks. Single technical interface for users, they show, for industrial actors involved, a mode of organization cannot be reduced to a commercial intermediation. So at the heart of this configuration are the "platforms" which are a new form of goods and services distribution and carry out the renewal of uses and related practices and a change in the value chain which are in the depths of effective change, hopes and fears aroused by the devices presented in our contribution.

Our paper aims at exposing the evolution of these devices in several fields of cultural industries especially mobile and audiovisual sectors with a focus on smartphone and connected TV industry. It intends thereby to question the double dialectic in these sectors in reconfiguration (integration / disintegration activities on the one hand and disintermediation / re-intermediation on the other hand).

Keywords : platforms, disintermediation, devices, cultural industries, connected TV

INTRODUCTION

Over the last two decades, cultural industries worldwide have experienced unprecedented technological and economic change. Digitisation has been a vector of a "revolution" that is far from over, and one that calls for interpretation. The cultural industries are fully engaged in this movement, opening up access to a range of international content but also giving a new dimension to their own products, and to regional exchanges.

But the most striking changes are taking place upstream from these industries, in publication, circulation and marketing, with new channels and forms of distribution which represent a threat, but also a potential opportunity, for traditional producers of
content. Over the last decade, for example, software giants such as Google, Facebook and Microsoft, and manufacturers such as Apple and Samsung, have made use of links between computing and telecommunications in the digitised creation of cultural products, and their distribution via the Internet, to develop new forms of intermediation without necessarily being physically present there. National cultural industries are being profoundly affected by the arrival of these new organisations, which are extremely diverse in terms of economic model, industrial structure, type of intervention, etc.

For the last twelve years a body of work in the fields of economics and management, particularly focused on the analysis of mutations occurring in the communications and cultural sectors, has tried to define the concept of "platform" in order to typify a recent mode of organisation (both technical and organisational) downstream.

1. Platforms?
   1.1. Specific features of platforms
   Thus, platforms refer to devices essentially characterised by a typical configuration and valuation mode. More specifically, a platform fundamentally aims at matching supply and demand by providing a coherent set of technical, informational and transactional functions (Apple Store is an archetypal platform model). However, two essential factors make this activity different from a traditional commercial intermediation: firstly, it does not consist in the purchase and resale of goods to final consumers but rather in the articulation of several markets, namely the offer of different goods or services to each user category of the platform (multi-sided markets principle); secondly, the value of the platform is found less in its ability to take a direct benefit on its transactions than in its ability to produce and capture externalities associated with these transactions, the platform generally being a way for its manager to an end in addition to the commercial intermediation (the most common case being the establishment of a platform for content distribution by a supplier who seeks primarily to promote sale of its terminals or the case of a platform managed by a "pure player" who seeks mainly to obtain valuable customer data in order to attract advertisers).

   Platforms, as a subject of research, have enjoyed a remarkable craze in the economic and management sciences over the past decade, so much so that a specific field of research, called "platform research", has been set up at Harvard Business School. The various studies conducted usually aim at outlining the structuring features of these devices.

   Yet the breakthrough of these devices, or "invisible engines" (as coined by Evans, Hagiu, Schmalensee, 2006) of the rise of IT companies on the web, is worth a careful examination due to its social, political, economic and cultural impact. A simple technical interface for users, these devices mean for the industry players a deep reorganisation of traditional organisation modes of the concerned sectors, making the control of these platforms a prime strategic issue.
1.2. A mediation activity in its own right

Fundamentally, a platform aims at matching supply and demand by providing a coherent set of technical, informational and transactional functions. However, the activity differs from a traditional commercial intermediation as it does not involve purchasing goods from suppliers for resale to final consumers; instead, it connects "affiliated" sellers with "affiliated" buyers (Hagiu, 2007).

For this reason, the platform is more like a virtual marketplace than a traditional store. Indeed, its activity is fundamentally based in the articulation of several markets – namely the supply of different goods or services to each affiliated users group - which operate within an indirect network effect framework (the actions taken on one side having an indirect impact on those conducted by actors on other sides) (Weil, 2010).

1.3. A typical architecture

The economists who first sought to identify the structural features of a platform initially put forward its technical and organisational characteristics: the architecture of a platform is thus systematically made of a core, whose elements are few and relatively stable, and an ever-mutating periphery (Baldwin, Woodard, 2009). What strikes them as remarkable is therefore the distributed nature of the production: the platform's industrial strategy does not, unlike many others, aim at integrating the various functions and activities of any given sector into a single entity. On the contrary, it seeks to promote the modularity of production elements and the plurality of associated actors.

From a technical point of view, platforms architecture is generally characterised by an automated servuction (a marketing concept, combining the words service and production, developed by P. and E. Eiglier Langeard in 1987 that describes the process of implementing a service). This automation exists on all sides related to the platform: upstream, content producers configure supply themselves, using "software assets" designed by the platform manager (provision of software development kits and specific programming interfaces: Apple SDK or Android SDK); advertising agencies (given free access to various platforms and applications) usually also have access to automated modules (for example: Facebook Ads, Google Ads, Apple iAd) to configure campaigns for advertisers.

Downstream, in most cases, platforms rely on a single authentication system (Single sign-on, SSO, is a property of access control) which provides a focal element allowing platform managers to customise their customer relationship and usually to exploit personal data for advertising purposes. Platform managers fulfil a set of economic functions that are both informational (search and prescription tools) and transactional (payment security, logistics management, etc.), most of which also being automated. For this reason, the majority of world-class digital content distribution platforms operate with relatively little staff (for example, Facebook only employs 4000 people worldwide).
Even if the elements listed above are common to all digital content distribution platforms, significant variations exist in their architecture. These appear from an organisational and technical point of view, based on two main criteria. The first one relates to the degree of function integration. If the modularity of elements remains a sine qua non condition for the existence of the device, some managers seek to grasp and develop in-house as many components related to the development of their platform as possible.

This criterion is linked to the manager's control of activities on different sides of the platform. This control can be more or less restrictive for parties upstream and downstream, and is exercised primarily via the bill of specifications imposed by the manager and the technical specifications of the system (for example, iOS guidelines are very restrictive). Therefore, according to the case under study, a very firm control can be exercised, similarly to an editorial activity in many respects (eg. Apple Appstore), or complete freedom can be granted to third party activities (eg. Google Play).

The second criterion for differentiation distinguishes between 'owners' platforms, namely platforms linked to an operating system (e.g. Microsoft and Windows Market), and interoperable platforms, which do not depend on a specific technicalities of an operating system or on the specific features of a terminal, which obviously facilitates porting (eg Facebook and YouTube are available from any device).

2. The case of mobile industry
2.1. The different functions of a platform manager

We will focus on non-specialised, transnational platforms related to the mobile industry (eg "Apple Store" or "Google Play") which appear to be the focal point for issues related to the rise of intermediation function. From the empirical study of strategies of the parties involved, we will pinpoint the key issues for the entire industry currently being structured. We will also analyse the impact of the introduction of these devices, at once technical, communicational, economic and organisational, on power struggles between all involved parties.

At the center of this system, the platform manager, in the same was as a commercial intermediary, has a role of "coordinator of supply and demand" (Gawer, 2009), but he also actively contributes to creating this demand. Indeed, from a transactional point of view, the primary role of the platform consists in reducing informational costs, standardising and making secure payment procedures safer for the end user (Brousseau and Curien, 2007).
These various activities are to a degree developed and integrated by the platform managers based on the objectives and strategies they develop. As previously underlined, we have to consider the fact that applications platform managers' activity inherently goes beyond the limits of commercial intermediation. Thus, platforms appear to be a means to serve different purposes: the sale of terminals (eg Apple / App Store, RIM / BlackBerry, Samsung / Bada), the sale of subscriptions to telecommunication networks (eg Docomo : I-mode DoCoMo,), the spread of an operating system (Google / Android, Windows Phone), the exploitation of customer data (which confers a competitive advantage for integrated advertising agencies – for example Admob, a Google mobile advertising company). For the various parties involved, it is therefore a question of capturing the positive externalities generated by the interactions of the two sides, the establishment and management of the platform not being an end in itself.

### 2.2. A variety of issues and players strategies

This approach is based on the configuration of platforms and is initiated by telecom operators, NTT DoCoMo and its I-mode service in Japan since 1999, Bouygues Telecom and its I-mode too from the end of 2002 in France. These successes were rapidly picked up by the equipment manufacturers and software and operating system developers. Apple paved the way by progressively transposing an integrated terminal /
OS / contents / content distribution platform package already experimented with dedicated Apple music players (iPod and iTunes) to smartphones.

This move will soon be copied by consumer electronics giants: Korea's Samsung and Japan's Sony, followed by the world leaders in the following sectors: Google in web economy, Nokia in mobile phone manufacturing, Microsoft in the software industry, with the addition of the outsider RIM/BlackBerry. All of them offered their own system associated with a new smartphones generation by autumn 2009. However, a number of strategies were adopted. In order to understand this dispersion, we must firstly consider the heterogeneity of all that the actors involved.

2.3. Initial situations and contrasting finalities
Four types of major players coexist within the sector:
- Devices/terminals manufacturers: Apple/iTunes, RIM/BlackBerry world, Samsung/Bada (Tizen)
- IT and web players: Google/Android and Microsoft/Windows market
- Telecommunications operators: NTT DoCoMo, Orange, KT, etc.
- Retailers: Amazon/Amazon Appstore

The nature and primary business sector of players have a great impact on their strategy, by specifically influencing their relationships with applications producers but more particularly by determining the purposes of each platform. Lastly, economic targets may differ, but all managers tend to "lock" users in a personalised and single brand environment. A "lock in" strategy, closely linked to the scale of "switching costs" (Farrell and Klemperer, 2007), has become significant within the industry: it's often expensive to switch from one operating system to another, all the more so as the downloaded applications paid by the user (videos, games, books, GPS...) are lost during the switch.

The goal is to keep users locked in a brand's digital environment: Apple, Microsoft and Google for example seek to establish themselves as "two-way gatekeepers", allowing a conditional entry to the platform for parties on each side while locking the exit door with rising of switching costs. This strategy is further intensified due to the increasing synergy between devices managed by a same company (e.g. Apple environment: Apple TV, iPhone, iMac, MacBook, iPad) and the growth of "cloud computing": the aim here is to confine the user in an environment with a personalised space whatever screen is used (computers, connected TVs, smartphones, tablet, music players) with all of his/her applications, documents, movies, pictures, music, etc. This evolution of the link between container and content leads to significant economic consequences that affect both the supply and demand conditions.

The rise of the smartphone market and the growing prominence of platform managers are radically changing the traditional production and distribution of content and services processes. The business models are rebuilt by new uses and services that redefine the content valuation methods and bringing value creation to the core of the sector. In this new configuration, the application (or content) itself is no longer the focal point (except for "killer apps" such as Facebook), but the service which allows to arrange them and makes them available is (the platform). This trend is part of the
underlying logic of digital economy: "digital creates value but it moves its collection from use to access" (Curien and Maxwell, 2011).

It appears that the platform manager is able to take over the central position in the mobile telephony sector hitherto attributed to telecommunication operators by controlling client relationship, billing, mobile services distribution as well as access to advertisers, with operators therefore likely to be relegated to mere technical service providers.

3. Connected TV: an innovative hybrid model in the audiovisual industry

The connected TV, or the arrival of the Internet on the Home TV set, has allowed, over the past few years, new players to integrate the audiovisual industry and new services to be implemented introducing two major changes. The first is unserialising, which offers the viewer a new way to interact with the content and thus breaks with the flow logics to allow a consumption potentially "active" and personalised. The second relates to the content supply that is no longer the exclusive domain of traditional broadcaster but is now likely to be open to all content or service publishers which means an increase in competition. Thus, the connected TV carries out two promises: the renewal of uses and related practices and a change in the value chain which are in the depths of effective change, hopes and fears aroused by the devices. Beyond the restructuring of relations between actors in the enlarged sector, this analysis highlights many key issues: the regulating conditions, the place and funding of contents, the valuation methods of production. The boom and the fragmentation of supply also lead to other question: the individualisation of practices.

3.1. Presentation of the technical object and services

A smart TV, sometimes referred to as connected TV or hybrid TV, (not to be confused with IPTV, Internet TV, or with Web TV), describes a trend of integration of the Internet into television sets and set-top boxes, as well as the technological convergence between computers and television sets and set-top boxes. Probably the most visible connected TV component, these STB provide access to a high number of features and are at the heart of user's experience via their interface. Initially cable or satellite TV decoders, these boxes became more sophisticated and diversified in the 2000s.

We identify four main types (it may be noted that the differences between the Set-Top-Boxes are changing):

- Connectable game consoles
- DVD / Blu-ray players, PVR / DVR (personal / digital video recorder) : nowadays, these functions are often integrated within other STB.
- Owner-dedicated boxes (putting the user in a specific digital environment controlled by a dedicated brand: Apple TV, Roku or Boxee). These boxes are also referred to as Over-the top (OTT) set-top box.
- The "operators boxes", which refer to terminals provided by network operators (cable operators, Internet providers and satellite operators).

The Internet has contributed to the appearance of new contents and services in
addition to or in competition with traditional uses related to television. Four main types can be identified:

- content and services offered by the channels themselves, in addition to their range of linear TV (catch-up tv, programmes not broadcast on the network, quizzes, competitions, polls, additional program information, statistics, etc.).
- online video content competing with TV channels: videos on demand (VoD), short content (e.g. music videos or movie trailers), user-generated content (UGC) etc.
- personal content locally stored (internal or external hard drive, home server) or via a cloud service.
- internet services reformatted for TV use: various information (e.g. weather, stocks), access to the main social networks, e-commerce, etc.

Due to the link between territorial (mainly national) anchoring and contents rights management, the offer of videos accessible from the connected TV devices varies greatly from a country to another but remains relatively similar in the same country (although the current trend is to search for exclusive content - see below). In the United States for example, Subscription Video on Demand (SVoD) services such as Netflix, Hulu or Amazon Video on Demand are available on most devices. In addition, the supply of Internet services on TV still remains relatively limited and is concentrated around a handful of players, in particular transnational web players like Facebook, Yahoo, Skype, Twitter.

3.2. Ergonomics, a key factor in differentiating offers

The addition of Internet-based contents and services to traditional TV leads to abundant supply and increased complexity for users. In an intensely competitive environment initially characterised by a certain degree of uniformity in terms of offers for both these devices and some OTT services (such as SVoD), the quality of the interface is crucial to attract and retain users.

Ergonomics, namely the usability and intuitiveness, the fluidity of the navigation system, the speed of response, the advanced remote control functions, the reliability of different devices and other features (parental control, personal data protection, secure payments etc.) appears to be a differentiating factor between the players.

Three types of interface (usually co-present) exist on connected TVs:

- platform applications (e.g. Samsung apps)
- portal (with a greater editorial involvement, e.g. Apple Tv)
- "widget" (Yahoo)

3.3. Reconfiguration of the relationship between players in the sector

Although it is highly premature to assess the impact of these devices, their growing popularity in the United States is poised to overhaul the audiovisual sector. At first glance, the established players seem significantly weakened by ambitious new entrants; however, they have undeniable advantages, particularly because of their proximity to contents production, which remains an essential resource.

Connected TV appears to be market open to several players: Web players ("pure players"), TV manufacturers, TV channels, games console manufacturers, the software
industry, etc. The heterogeneity of actors, both in terms of economic importance and primary activities, logically leads to various positionings and strategies: some specialise in video catalogs, some favour Internet services, others seek to offer a multi-content catalog etc.

However, our analysis shows that the threat connected TV poses to traditional channels should not be overestimated. OTT video offerings (like Netflix) may represent an extra option or a one-off substitute to linear TV, however it is not a complete alternative to the broadcast stream. Channels have great assets to withstand the arrival of online content on TV: the strength of their premium programmes and of their media brands, the power of prime time and live events, their ability to retain audience loyalty to daily or weekly programmes (series, TV news, reality shows, etc.).

Network operators (telecommunications company, Internet service providers, cable and satellite operators) seem more vulnerable to the spread of the connected TV devices (even though they take part in it): the rise of OTT content consumption on TV could lead to a strong growth in video traffic on IP and therefore to significant problems for bandwidth management, with a risk of network congestion in the event of overcrowding. Moreover, the additional traffic costs generated by the massive use of OTT video do not generate additional revenue for Internet service providers, which brings of the financing of networks infrastructure into question.

Furthermore, the number of subscribers to pay-TV services in the United States fell for the first time in the second quarter of 2010. A study on connected TV (Curtin, Holt, Sanson and Sutter, 2014) points out to the phenomenon of "cord cutting": the fact, for a pay-TV network customer, of terminating his/her subscription in favour of an OTT video service. This phenomenon has been on the rise amongst young consumers during periods of economic turmoil. Owing to this, Netflix has become the top video service in the United States in 2010, overtaking long-established Comcast, the top cable operator in the country.

The arrival of the Internet in mainstream television raises the question of a structural transformation of the industry, of its players, and of the modes of programming and programmes consumption. Television used to be watched on a specific screen with specific contents, regulation and recognisable players. This framework is being overhauled by the arrival of digital technology. Not only can TV be watched on multiple devices but the arrival of Internet TV has granted entry to new players (portals and platforms). The development of broadband seems to go hand in hand with new forms of audiovisual content consumption, including non-linear video services (catch-up TV, video on demand, subscription to video catalogs ...) reinforcing usage fragmentation.

**Conclusion**

The recent proliferation of digital contents distribution/broadcasting platforms has generally led to a reorganisation (sometimes a deep one) of cultural/communicational industries. Two aspects should be highlighted: the first one is the sharing of industrial risk, the second is the role now played by powerful downstream new players.
The establishment of contents distribution/broadcasting platforms has indeed facilitated the transfer of a part of the uncertainty regarding the valorisation of production to complementary goods producers who take on all the investments and are paid ex-Post. Consequently, the entry ticket price to the studied platforms is kept intentionally low (or free) in order to best attract content providers. The widespread use of these platforms undoubtedly lowers the barriers to entry to the media contents market for a large number of producers. This facilitated access for consumers consequently lead to lesser visibility of the multitude of products offered (except for "premium" content). Therefore, prescription and promotion play a crucial role in boosting these products.

Prescription and promotion are mainly assumed by the platform manager, who selects the contents to highlight according to automatic rankings (usually based on the number of downloads and user ratings) but also according to commercial agreements. Additionally, it is worth noting that despite the relatively small number of exclusive rights contracts for contents, multiple affiliations (the same content being available on different platforms) are far from being systematic, mainly because of porting costs difficult to afford for the most economically vulnerable producers. The outcome is, on the one hand, an often significant catalogs differentiation (in terms of the number and the types of references) between competing platforms and on the other hand, a "winner takes it all" mechanism benefitting the most popular platform, popularity on the downstream side (end users) promoting the arrival of new players on the upstream side (content producers and advertisers) at the expense of competing platforms. This new landscape is also marked by a generalization of "coopetition" relationships between players (Samsung and Google are both partners and competitors) and a rise of multi-level platforms (the presence of the Amazon app-store, Facebook App Center or Docomo Market within the Google Play platform is illustrative of this trend). We can also notice that all the platform managers which succeed have an international dimension: indeed, local platforms, focusing on a national market (eg imode/Docomo in Japan) are not strong enough to challenge global players which are much more attractive for users and specially for content producers: the case of mobile industry is illustrative of this trend, an application developer can reach almost all the smartphone users worldwide with only two intermediaries (Google and Apple).

As previously explained, these digital contents distribution/broadcasting platforms result from strategies implemented mainly by communications players and device manufacturers. They now occupy a strategic position, downstream of content industries. Platforms managers also have control of all the strategic parameters: they define technical standards for content, they usually set retail prices, the remuneration level of content producers and control the customer relationship (exclusive acquisition of customers’ data). Within this new framework, the source of value is no longer content itself (although content still dictates the usage value of the entire system), but the service that can arrange it and make it available (the platform).
References


