PUBLIC ANSWER OF THE PUBLIC CONSULTATION OF UNITED KINGDOM COMPETITION AND MARKETS AUTHORITY (CMA) ABOUT THE COMPETITION OF MUSIC STREAMING PLATFORMS

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Introduction

In February 2022, the CMA released a consultation to the public about the competition between music companies and the competition between music streaming platforms.

These include identifying the business Models (how music companies and music streaming platforms generate revenues), the market structure (assessing the structure of the music value chain and the degree of concentration in each level of the value chain), the value chain in the music streaming market, consumers behavior (examine how consumers choose and use music streaming platform), music creators chooses (how artists choose music companies and platforms to distribute its music works), the nature of competition about each kind of competition (examine how music companies compete and how music streaming platforms compete, identifying the main parameters of competition, competitive restraints, competition issues that may arise from agreements between music companies and music streaming platforms), and identify possible harms to consumers of music, harms to creators of music (artists) and harms to innovation.

[1] I declare that I do not have conflicts of interest about the issues expressed in this document. As well, that my opinions are neutral and that I am not receiving any payment or fund to write this document.

In this document I will attempt to describe the differences between three types of competition:

I. **THE COMPETITION BETWEEN MUSIC COMPANIES.**

II. **THE COMPETITION BETWEEN TRADITIONALLY MUSIC FIRMS WITH MUSIC STREAMING PLATFORMS.**

III. **THE COMPETITION BETWEEN MUSIC STREAMING PLATFORMS.**

I. THE COMPETITION BETWEEN MUSIC COMPANIES

This kind of competition is about understanding and describing how the traditional music business value chain is operating at present in the industry of music in the UK.

a. *How do recorded music companies compete with each other in the value chain of the supply of music?*
b. *How well is competition working al present between recorded music firms and publishing firms?*
c. *The causes of bargaining power by recorded and publishing firms?*
d. *To what extent can music creators seek to better terms for the services they are offered by recorded music companies?*

1.1. THE TRADITIONALLY LINEAR BUSINESS MODEL

The traditional linear business model was introduced by entrepreneurs in the past Industrial Revolution. And it has been the business model which has been examined by Competition Authorities in the last century when assessing the strategies of unduly monopolization implemented by entrepreneurs.

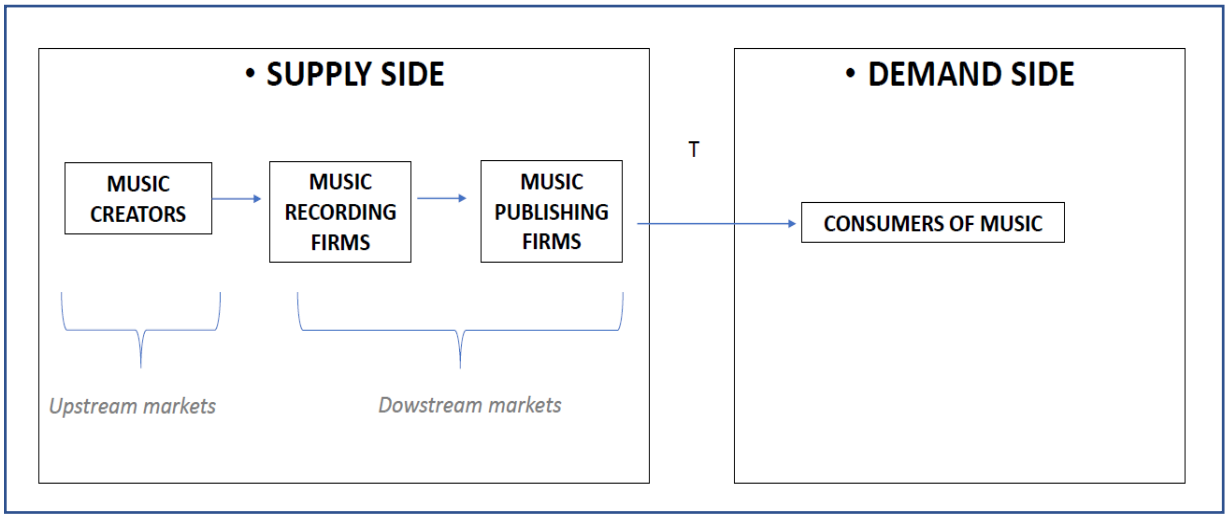
In this sense, in its book "Modern Monopolies", two authors, Johnson and Moazed (2016) ask: "*What is a linear business model? It's a model that has dominated in various forms since the Industrial Revolution when new technologies like steam power and railways gave rise to the large, vertically integrated organizations. All of the titans of industry from the early twentieth century were linear businesses, including Standard Oil, General Motors (GM), U.S. Steel, General Electric, Walmart, Toyota, ExxonMobil, and on. Each of these companies created a product or service and sold it to a customer. In all of these examples, value flowed linearly and in one direction through the company's supply chain. Hence the term "linear business*"[2].

[2] Ibid., position 400.

For these authors, in the traditionally linear business model "*value flows linearly through the supplier to the manufacturer and eventually down to the end consumer of the product. At each step on the supply chain, someone adds value to the product or service and then moves it on to the next link in the chain.*"[3].

In this line of thinking, at the moment to analyze the competition in the industry of music a holistic and theoretical graphic would be the following:

FIGURE 1. THE TRADITIONAL LINEAR VALUE CHAIN IN THE MUSIC INDUSTRY



Source: Author`s elaboration CMA public response (2022).

For Johnson and Moazed (2016) are two types of linear business model[4]:

(a) Sellers of a product, and.

(b) Sellers of services.

For them these two types of business models "*dominated the twentieth century for a good reason: they can be very efficient. Premised on top-down planning and hierarchical organization models, these businesses create value and distribute it efficiently to their target customers. They achieved this efficiency via the supply chain, a highly structured system for*

[3] Ibid., position 400.
[4] Even most software actual companies still implemented the linear business model, including software-as-a-service (SaaS). Ibid., position 399-414.

organizing activities and resources that moved a product or service from the company to the customer."[5]. This is the reason why the linear supply chain was one of the issues of major competitive advantage and that's why most of the major innovations of the latest centuries has been related to improving the business value chain[6].

For instance, in the traditional linear supply chain of the music industry value creation flows linearly through different firms (upstream markets to downstream markets) to the final consumer of the product. This is the business model used by traditional music firms (Sony, Warner, and Universal).

1.2. THE ANALYSIS OF TRADITIONAL COMPETITION BETWEEN LINEAR BUSINESSES UNDER COMPETITION LAW

Nowadays, it is almost a consensus between economists, competition authorities, and legal courts to use the same theoretical model at the moment to examine the competition between linear businesses in the different industries. These theoretical tools are based on classical economic doctrines universally accepted. The classical economic theory held that in a free market system, prices are settled by supply and demand natural forces without being controlled by a central subject. However, market prices may be distorted by a seller with monopoly power or a buyer with monopsony power. In this line, **monopoly is defined as a market structure with a single seller on the supply side**. While monopsony is described as a market with one buyer on the demand side.

As well, classical economic doctrines held that market power in the selling side (monopoly power) causes consumer welfare detriment due to higher prices and low quality of products. In this line, for years, it has been a broad consensus that the ºmain criteria that should guide the enforcement of competition law is the Consumer Welfare Standard (CWS) according to which the harm of competition must be probed with the lessening to consumers surplus (prices increase).

[5] Ibid., position 424.
[6] Ibid., position 440.

In practice, following this traditional definition of market dominance, legal Courts have identified the existence of a dominant position with market power on the selling side. Therefore, Courts have measured market dominance using market concentration metrics on the selling side (e.g., HHI or market shares). But the use of concentration indices requires previously to delimit the relevant market which is a tool for identifying *"the geographical area within which significant substitution in consumption or production occurs"*[7]. This is (competitive constraints on the supply side) and (competitive constraints on the demand side).

Usually, to identify this area, Courts use the SSNIP test, which is necessary to combine different products into a single relevant market when those are substitutes between them due to these products restrain the firm's ability to raise prices because customers switch to substitutes rather than pay higher prices.

Following the above competition authorities examine which firms in the supply side of the market (monopoly power) and the demand side (monopsony power) have market dominance in different levels of the value chain of the music industry in a geographical territory considering the following factors:

- The market shares of each firm in the supply side of the market for each segment of the value chain of the music industry.
- The vertical integration of linear businesses.
- The barriers to entry to each market (natural or artificially created by the firms).
- Supply-sided competition constraints to increase prices.
- Demand-side competition constraints to increase prices.
- Network effects of traditional music firms.
- To identify the natural monopolies of the industry of music.

Here, although each firm has a worldwide presence, the investigation is centered on the economic activities carried out by the companies that have been recognized legal personality.

[7] *Case Ohio et all v American Express Co et all (2018).* No. 16-1454.

II. THE COMPETITION BETWEEN TRADITIONAL MUSIC FIRMS WITH MUSIC STREAMING PLATFORMS

This type of competition is about analyzing how the supply value chain of music has changed since the introduction of music streaming platforms no more than two decades ago. As well as how the preferences of consumers of music changed due to the introduction of music streaming platforms.

2.1. THE COMPETITIVE DYNAMIC BETWEEN TRADITIONAL LINEAR BUSINESSES IN THE MUSIC INDUSTRY WITH MUSIC PLATFORM STREAMING PLATFORMS

- *What are the strategies used by traditional music firms to compete with music streaming platforms?*
- *What are the strategies used by music streaming platforms to aggregate the market (supply and demand side) over its digital infrastructure?*
- The way recorded music firms compete in the supply of music works to consumers with streaming platforms. *At which level of the supply value chain?*
- The way recorded music firms compete in the demand for music works from music creators with novel music streaming platforms.
- *If there is effective competition between recorded music firms with music streaming platforms?* Or the opposite, *if recorded music firms are being part of the music streaming platforms ecosystems and thus, sharing revenues with music streaming platforms?*
- The way publishing music firms compete in the demand of music works from music creators with novel music streaming platforms.
- *If there is effective competition between publishing music firms with music streaming platforms?* Or the opposite, *if publishing music firms are being part of the music streaming platforms ecosystems, and thus, sharing revenues with music streaming platforms?*
- The way traditional music broadcast is competing with music streaming platforms (e.g., the competition between BBC broadcast with Spotify music streaming platform).

These issues are important to identify the way the introduction of music streaming platform ecosystems disrupted the traditional supply value chain of the supply of music to consumers. As well as the way the music streaming platforms changed the consumer's preferences.

2.2. COMPLAINTS ABOUT THIE SECOND KIND OF COMPETITION

2.2.1. Exploitative practice: Unfair remuneration or nor reward for creators of the platform inventory by the platform orchestrator

Music creators (songwriters, performers) are complaining that while the revenues of the platform managers (e.g., Google LLC, Apple Inc, Spotify Ltd, Amazon Inc) and major music labels (Sony, Universal, Warner) are growing disproportionally, music creators are not receiving a fair compensation by its works, and in many cases, they do not receive remuneration at all (e.g., non-featured artists).

A. The secrecy of the contracts signed between Platform-Manager with Major record Labels

Music creators are complaining that the agreements between the platform-operator of music streaming platforms with the firms that hold the copyrights (such label music records) are confidential[8]. And the opinion of regulators is that these agreements are private and not a public issue.

B. The Revenue Sharing Agreements between platform-operators and major music labels

In a press article from 2011, The Verge media obtained a contract between Sony Music Entertainment and Spotify giving the streaming service a license to utilize Sony Music's catalog. The 42-page contract was signed in January 2011, a few months before Spotify launched in the US. Written by Sony Music, the two-year deal — with an optional third

[8] https://www.theverge.com/2015/5/19/8621581/sony-music-spotify-contract

year that Sony Music could pick up — reveals how much Spotify must pay in yearly advances to Sony, the subscriber goals that Spotify must hit, and how streaming rates are calculated.

In this press article The Verge held:

"In section 4(a), Spotify agrees to pay a $25 million advance for the two years of the contract: $9 million the first year and $16 million the second, with a $17.5 million advance for the optional third year to Sony Music. The contract stipulates that the advance must be paid in installments every three months, but Spotify can recoup this money if it earns over that amount in the corresponding contract year.

But what the contract doesn't stipulate is what Sony Music can and will do with the advance money. Does it go into a pot to be divided between Sony Music's artists, or does the label keep it to itself? According to a music industry source, labels routinely keep advances for themselves.".

This press article cited:

"I've worked at the major labels, and I've worked at the indies, so I've seen both sides of the business," says Rich Bengloff, president of the American Association of Independent Music. "A lot of the time, money that is paid outside of the direct usage doesn't end up getting shared.".

In the same line, several complaints refer that the YouTube video streaming platform does not obtain proper licenses for the recorded music it streams, nor does it pay fees analogous to those paid by other streaming services. Instead, GOOGLE LLC offers content publishers a revenue share of the advertising revenue that the platform earns. Thus, these Revenue Sharing Agreements, make that YouTube Platform competes unfairly against other audio-streaming platforms, as well as, radio stations and television, and also, treats music creators unfairly.

Revenues Sharing Agreements (RSA) are creating an illegal competitive advantage between music streaming platforms that use it with the traditional broadcast that are paying a higher royalty fee to music creators. As well, this is a competitive advantage to potential music platforms that cannot afford these payments.

The problem with the lack of remuneration for music creators is that a lack of fair remuneration discourages them to innovate because they cannot recoup their investments. Thus, these contractual agreements are harming production and innovation by music creators. The question here is *how to guarantee a fair remuneration to the creators of the inventory of each platform by the platform manager?*

But the principal issue is that these Revenue Sharing Agreements (RSA) in which the platform-manger pays large money revenues to major music labels are distorting competition. This because platform managers are "being friends" with major labels which could be exert bargaining power about platform-ecosystem governance. Too, the MFN clauses are distorting competition between major music labels and decreasing the bargaining power of these labels with music streaming platforms.

C. The lack of auditability of revenues and payments of the music streaming platforms

In addition, there are several complaints about the transparency and lack auditability of revenues ad payments from music-video streaming platforms.

D . The bad example to Music Streaming Platforms that want to compete fairly

The music streaming platform Deezer which is itself endeavoring to move to a UCPS (User-centric Payment System), is facing resistance from the major labels. Hence, *how a company that wants to compete fairly in the music industry can do that with too much resistance?*

When it was explained the novel platform business, it was described that the platform-manager does not manufacture the platform inventory (e.g., each music video or song track)

but is the external producers (artists) who create value. Nevertheless, we are seeing how all the compensation paid by consumers of music is going concentrated to the platform manager and large intermediaries[9].

Proposed Solution: (a) The proposals of participants of the music industry is about a sector regulation in each country that forces the platform-manager to guarantee fair remuneration for music creators with another royalty fee payment. (b) To introduce transparency in the accountability of revenues in each platform: external auditability and separate legal accounting for each platform-ecosystem. (c) Reinforce taxes of each platform, and (d) make public the agreements signed by major record labels with platform streaming platforms. (e) To prohibit the MNF clauses that distorted competition between major music labels. (f) To prohibit the Revenue Sharing Agreements used by music streaming platforms.

2.2.2. The Most favored Clause incorporate in agreements between major label companies and music streaming platforms

Furthermore, the Verge press article cited:

> *"Sony Music's Most Favored Nation clause is the most intriguing piece of its contract with Spotify. Section 13 essentially makes every major aspect of the contract amendable if any other label has a better deal or interpretation of that aspect than Sony Music. Section 13(2) lists the provisions which can be amended in Sony Music's contract if a better deal is obtained by another music label, including what constitutes an "active user," the definition of gross revenue, and any improved security provisions. Sony Music can call on an independent auditor once a year to determine whether Spotify has struck a more agreeable deal with any other labels.*
>
> *Having an MFN clause in a contract is standard for music licensing contracts, according to multiple sources. MFNs have garnered scrutiny in the past, and as part*

[9] The CMA needs to realize that complaints about unfair remuneration of the creators of the inventory of the platform are being repeated with other platform ecosystems. For example, drivers from the Uber platform and actors about movie streaming platforms (several actors from Hollywood have complained about this situation).

of its merger with EMI in 2012, Universal Music Group had to stop using the clauses in Europe for 10 years. But they remain legal in the US.

Where the MFN clause truly comes in handy for Sony Music is when it's used in conjunction with section 5, the "annual true-up of advances" clause. This clause makes sure Sony Music's yearly advances from Spotify are on par with the best deal negotiated by any other label based on the percentage of market share. That means if another music label is getting paid $1 million by Spotify for each percentage of market share it has, and Sony Music is getting $600,000 per market share percentage, Spotify must pay Sony Music the $400,000 difference — known as the adjusted contract period advance — at the end of each contract year.".

2.2.3. Lock-in Strategy: The not possibility of disintermediation of artists to the record labels and distributors

These complaints refer to artificial barriers that impede that music creators can disintermediate from major record labels at the moment to upload the music work to music platform streaming. The question here is to identify *why artists have not been able to disintermediate from the major record labels and classical distributors?*

The benefit of the lack of disintermediation of artists from the large label music firms is that it ensures that self-release artists must go through intermediaries such as digital distributors and aggregators to distribute music on music streaming platforms.

a. The strategies to impede the disintermediation of artists from record labels at the moment to stream its music work on music streaming platforms

Technological developments in recent years have made possible the music DIY Artists. These musicians want to control the production, promotion, and distribution of their music creations. These artists are characterized by the in-house production of their music. The

recording is mostly done at the home studio using cheap tools and in micro-scale production (just four productions per year for example).

A&L services offer a platform that allows artists to directly upload their music for distribution to streaming platforms. It does not imply the transfer of music rights to major label records. For instance, AWAL is a company that serves as an alternative to the traditional music label deal, offering deal structures to artists and independent labels without them giving up ownership or control of copyrights. However, AWAL was bought by Sony in 2021 (pending approbation by CMA and without objection from many competition authorities worldwide).

Too, the major music record labels have established their A&L divisions (Orchard by Sony, ADAI by Warner).

Another example, Spotify's attempt to develop a new tool that allows artists to upload music directly to the platform was discontinued in July 2019. For several witnesses that attempts about disintermediation from record labels and distributors were stopped due to negotiations of the participants of the music industry.

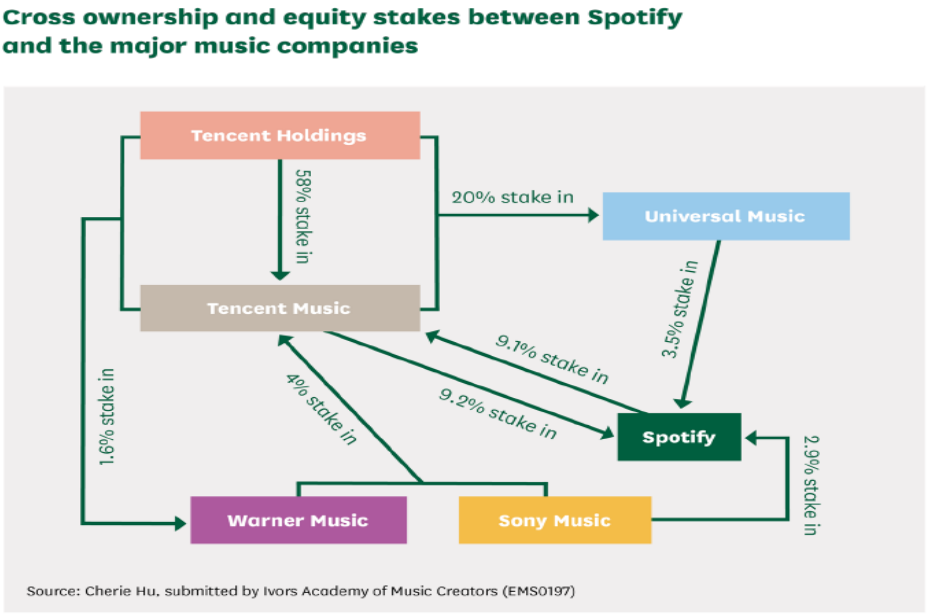
Major record labels are trying to continue in the profitable business of sharing revenues with music streaming platforms. However, the major record labels are implementing strategies to maintain their monopoly power that is causing harm to the innovation of novel tools that allow artists to upload the music directly to music streaming platforms.

b. The ownership control of the major music labels of the platform-manager firm

Another complaint is that some major record labels have influence (control) over the platform manager of some of the music streaming platform ecosystems.

For instance, the vertically integrated music firms (Warner, Sony, and Universal) have control over the firm Spotify Technology S.A. (which is the platform-manager of Spotify ecosystem), as the following graphic shows:

FIGURE 2. OWNERSHIP OF THE PLATFORM MANAGER FOR THE MAJOR RECORD LABELS



Source: Report Economic of music streaming, House of Commons, UK.

In this case, the providers of the platform inventory have ownership influential over the platform manager of the Spotify music platform ecosystem.

Proposed solution: (a) Agreements between platform-manager and music creators need to be regulated by the government as public mass contracts[10]. (b) To identify clauses in agreements between platform managers and major music labels about the prohibition to disintermediation of the major music labels. (c) To ban the prohibition that artists cannot upload music directly to the platform. (d) To assess the convenience that major music records have influential in the platform-manger firm of music streaming platforms. (e) To prohibit agreements of music share revenues between the major music labels and music streaming platforms.

[10] Similar to contracts signed by consumers of the Telecommunication service providers.

III. THE COMPETITION BETWEEN MUSIC STREAMING PLATFORMS

Finally, the third type of competition is about the dynamic of competition *between* and *within* the music platform ecosystems. And *how music industry organization is likely to change in the future?*

3.1. THE DEFINITION OF PLATFORM-ECOSYSTEM AS A META-ORGANIZATION

3.1.1. The fallacy of the Digital Space

One of the questions between antitrust scholars is *what is Google? What is YouTube? What is Facebook? If digital platforms are digital firms? Or, If digital platforms are a multisided market? in sum, what is an online platform?* To answer these questions, nowadays almost all individuals believe that devices connected to the Internet network are objects to enter cyberspace. For many people, the notion of cyberspace is explained as an analog world that humans can enter using digital devices. Following this conception, at present time, many antitrust scholars, professors, lawyers, judges are using the expression of "Digital Markets" as different from "Real Markets", or "Digital Firms" as different from "Real Firms". And following this way of thinking, regulators are facing many doubts about how to regulate this unreal cyberspace or the analog world.

However, I will support that this misconception about digital platforms is overcome when 'Digital Platforms' are defined by Law as novel meta-organizations. And as previous meta-organizations (such firms, countries, cities, geographical markets) these are just legal abstractions that are used by Law systems to regulate these social-economic organizations following democratic values. Hence, in this line of thinking, "Platforms" would be so unreal as firms (and Google would be as unreal as London due both would be understood just as legal abstractions). As well, in this line of thinking, the regulation of digital platforms will be the regulatory framework of a novel meta-organization simply.

To start understanding platforms as meta-organizations, and overcome the misconception of cyberspace, the first and necessary step is to describe the novel platform business model implemented by some entrepreneurs due to the recent fourth industrial revolution.

3.1.2. The newest platform business model

A worldwide recognized author and international speaker about platforms[11], Paul Sangeet, in his book "*Platform Scale. How an emerging business model helps start-ups build large empires with minimum investment*" (2015)[12] distinguish between the traditional pipeline business model (pipes) and the novel platform business model (platforms)[1]. For this author "*We are no longer in the business of building software. We are increasingly moving into the business of enabling efficient social and businesses interactions, mediated by software*".

Similarly, two authors from managerial literature, Johnson, Nicholas L, and Moazed, Alex. The book *"Modern Monopolies. What it Takes to Dominate the 21st-Century Economy"* (2016) defined platform as "*a business that connects two or more mutually dependent groups in a way that benefits all sides"*[13]. For them*, "In plain English, platforms allow consumers and producers to connect and exchange goods, services, and information. By doing this, these businesses create new markets"*[14].

In addition, MIT professor Cusumano, A. Michael., Gawer Anabelle, and Yoffie, David, in the book title "*The Business of platforms. Strategy in the age of digital competition,*

[11] For instance, conferences upload to YouTube platform at https://www.youtube.com/watch?v=BQg34ROtuko and https://www.youtube.com/watch?v=x7lnmlSmtsI

[12] Sangeet, Paul. "*Platform Scale. How an emerging business model helps start-ups build large empires with minimum investment*". Platform Thinking Labs Ltd. 2015. Kindle e-book edition, ISBN: 978-981-09-6757-4.

[13] Johnson, Nicholas L, and Moazed, Alex. *"Modern Monopolies. What it Takes to Dominate the 21st-Century Economy".* St. Martin´s press. New York, May 2016. Kindle e-book, ISBN: 9781250091901., position 111.

[14] Ibid., Kindle e-book position 107. In the same line, Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet, Paul. "*Platform Revolution. How networked markets are transforming the economy and how to make them work for you*". W.W. Norton & Company. New York. Kindle e-book, 2016. ISBN 978-0-393-24912-5. Too, Cusumano, A. Michael., Gawer Anabelle, and Yoffie, David. "*The Business of platforms. Strategy in the age of digital competition, innovation and Power*". May 2019. HarperCollins publishers. New York. Kindle e-book edition, ISBN: 978-0-06-289633-9.

innovation and Power" (2019) explain the novel platform business model competition dynamic.

a. The Fourth technological revolution

To understand the meaning of platforms, it has to be realized that the fourth technological revolution is a collection of different technologies which are disrupting the traditional linear value chains of traditional industries and making possible the creation of novel business models.

Nowadays, developments in global connectivity, computer processing, information storage, and data speed caused transactions cost decrease, that modern individuals were able to manage large amounts of information, and they started to have easy access to professional tools which were before only available to large firms. Too, it caused that individuals who never met before can now communicate with each other to accomplish complex tasks developing the trust needed to facilitate exchanges[15]. The consequence of these changes was that *"Decentralized networks of autonomous individuals who existed outside the bounds of any single organization have taken over many productive activities that used to occur within a single, hierarchically organized company*[16].

b. The value ecosystem

Johnson and Moazed (2016) explain, under the newest platform business model the firm does not manufacture a product or service but creates an infrastructure over which third parties can create and interchange value[17].

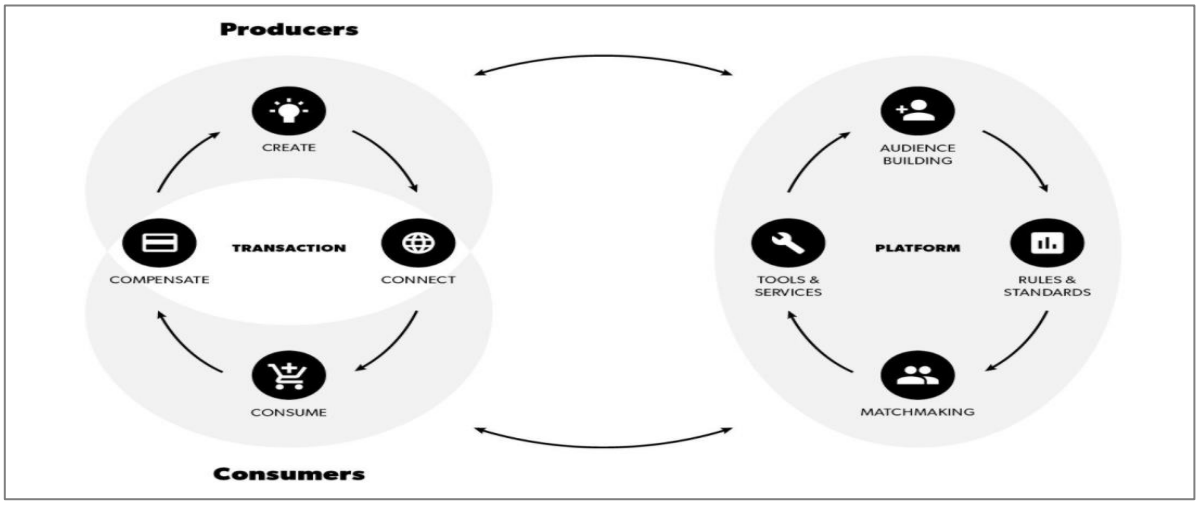
Thus, for these authors, the real transformation of the recent technological developments is not related to the Internet as a new distribution channel[18], but the true revolution was that:

[15] Ibid., position 979 to 1152.
[16] Ibid., position 1100.
[17] Sangeet., Op. Cited., position 265.
[18] This assumption is known as the "channel fallacy".

"The aggregator and creator of business value is no longer a company's supply chain or value chain but rather a network's ecosystem. Value has moved from creating products and services to facilitating connections between external producers and consumers. The firm has collapsed as a center of production and instead has become the center of exchange. The areas where businesses could create and add economic value have shifted away from production and toward the curation and management of networks. That's where platform business comes in."[19].

Following, Johnson and Moazed (2016) describe that the platform (as an organization) does not have a linear supply value chain, rather the value ecosystem is the new supply business chain[20]. These authors held "*A linear business's primary inputs are internal -it acquires resources and turns those inputs into outputs. But a platform's biggest resource is its network. A platform doesn't directly create much of the value that gets consumed. Rather it facilitates a two-way exchange among its users. As a result, platforms don´t have value chains in the traditional sense... a platform has a set of primary activities that directly create value for its users as well as a set of secondary activities that serve to support that value creation. Combined, these activities form a value ecosystem."*[21]. As the following Figure show:

FIGURE 3. THE VALUE ECOSYSTEM



Source: Book Modern Monopolies, position 1774.

[19] Ibid., position 1112.
[20] Ibid., position 1761. (Similarly, Sangeet., position 476).
[21] Ibid., position 1761.

In the new platform business model, the core transaction in the value ecosystem is a set of four actions that producers and consumers need to repeat several times to create and interchange value:

Creation by producers. First, as the platform does not produce products or services, this firm needs to attract external producers which create an inventory and put it into its owned plug-and-play infrastructure. This inventory can be music videos, song tracks, movies, pictures, physical goods, personal services (transport, delivery), software applications (Apps), Art pieces. These units become the platform supply, and the platform is more valuable as more units of value are added on top of its infrastructure. Contrary, without these units of value the platform does not have value in itself.

Connect. Second, the platform company needs to attract some consumers to connect with this inventory provided by external producers.

Consume by consumers. Once consumers came into the infrastructure, the platform company needs those consumers to consume the value represented by the inventory. This action can be such as purchasing a physical good (Amazon platform), asking for a service (Uber platform), downloading an app (Apple App-store), or watching a music video (YouTube).

Compensate. The final step is when consumers create value. And this value is given to the producer in exchange for what they consumed. Consumers need to compensate producers. But this compensation is not always a monetary payment (a price), because there are many other ways in which consumers can compensate producers. Here, "*In the context of a platform, monetary value is transitory – it passes through and out the platform quickly. In contrast, reviews, ratings, likes, shares, comments, follows, and other types of compensation create value that's stored in the platform and can increase the producer's ability to get value out of it in the future.*"[22].

[22] Ibid., position 1834.

As can be seen, for instance, about the YouTube music streaming platform, the platform-manger (Google LLC) does not manufacture the platform inventory (e.g., each music video) but are the external producers (artists) who produce each of the music videos. Thus, the artists are who create value to later upload the music-video piece into the platform infrastructure (software).

In this line, modern doctrine explains that the novel platform business mode is in opposition with the traditional linear supply chain where value creation flows linearly through different firms (upstream markets to downstream markets) to the final consumer of the product or service. And which was the business model used by traditional firms.

Nonetheless, competition authorities insist on keeping the traditionally linear business model tools when analyzing competition between platforms. Worldwide competition authorities are being myopes about the new dynamic of competition *between* and *within* platforms.

3.1.3. The definition of Platform-ecosystem as meta-organization

After defining Platform as a novel business model, it must be noticed that the implementation of this novel business model is creating a new type of meta-organization, labeled in the doctrine as 'the Platform-ecosystem'.

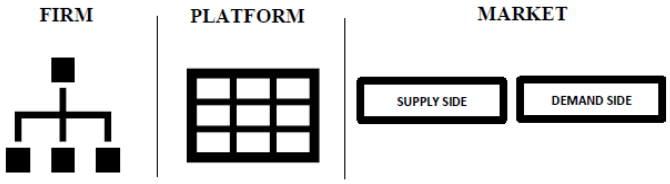
In this line, authors such Kretschmer, T, Leiponen A, Schilling M, Vasudeva G. (2020) explain that 'platform-ecosystem' must be thinking as a new type of hybrid meta-organization between firms and markets which "*are less formal and less hierarchical structures than firms, and yet more closely coupled than traditional markets"*[23]. For these authors, the distinctive feature of the platform-ecosystem is: *"it's a modular and interdependent system of core and complementary components bound together by design rules and an overarching value proposition. This makes platform ecosystems an organizational form on its own (a*

[23] Kretschmer, T, Leiponen A, Schilling M, Vasudeva G. "*Platform ecosystems as meta-organizations. Implications for platform strategies*". October 2020; pp., 1-20. https://doi.org/10.1002/smj.3250., page 1.

"meta-organization"), neither possessing the hierarchical instruments of a firm, nor the largely uncoordinated decision making of market."[24].

In a graphic, and to start differentiated platforms from firms and markets, a Platform can be represented as a decentralized network of individuals, Thus,

FIGURE 4. PLATFORM AS A NEW ECONOMIC META-ORGANIZATION



Source: Author´s elaboration.

Johnson and Moazed (2016), in its book, explain how imperceptibly *"the pendulum has swung significantly from decentralization toward large organizations -platforms- that create what are, in effect, large, centrally planned markets"*[25]. For them, the recent technological revolution has *"invalidated Hayek´s assertion that a central planner can't organize large-scale economic activity, Today, that´s precisely what's happening to increasingly large sections of our economy. The only difference is that the central planner is not a government bureaucrat. Rather it´s a set of algorithms and software tools operated by a platform to manage and grow a decentralized network"*[26]. In this sense, they ask:

> ***"What is Google Search, for instance, but an enormous, centrally planned economy of content and information? All of this economic activity is being centrally planned and orchestrated by computers running algorithms (…)"***[27]***.***

Johnson and Moazed (2016) held: "*Platform combine characteristics of traditional organizations and markets. A platform is essentially a* synthesis *of Coase's firm and Hayek's market. The firm no longer invests in production but rather in building the infrastructure and*

[24] Ibid., page 2.
[25] Johnson., Op. Cited., position 1187.
[26] Ibid., position 1165.
[27] Ibid., position 1178.

tools to support and grow a networked marketplace or community. What these platforms are creating are, in essence, centrally planned markets. That many would think of this as a contradiction is mostly a result of historical ideology rather than present-day fact"[28].

3.1.4. Monetization of the network effects

One of the most important issues about platforms is the way the platform manager can monetize the network effects. Here, once the platform has been able to generate strong positive network effects, the next step is that the platform company needs to monetize it. And since platforms do not sell a product or service directly to the customers building a business based on network effects requires a different way of thinking about market dynamics, competitive strategy, and monetization[29].

In general, rather than selling the technology for a price to customers, the platform-company invites users to join the platform, and later the company seeks how to monetize the platform network effects. For instance, pulling users to the platform for free and later charge for a freemium service in which users pay for a better version (e.g., premium place in Google AdWords), or subsided pricing to one side while charging full price to another side[30]. Geoffrey et al (2016) explain that monetization is about capturing a portion of the 'excess value created by the platform' which can be in four forms[31]: access to value creation, access to a market or community, access to tools and services which facilitate interactions, and access to curation mechanisms that enhance the quality of the interactions.

The monetization strategy depends on the type of platform: (a) Innovation Platform or (b) Transactional Platform.

Innovation Platforms: Innovation platforms create value by facilitating the development of new complementary products built by third-party over the platform. And as long innovation

[28] Ibid., position 1124.
[29] Cusumano et al., Op. Cited., position 1000.
[30] Geoffrey et al., Op. Cited., position 1886.
[31] Geoffrey et al., Op. cited., position 1887 to 1905.

platforms have high fixed costs to create a new feature (R&D), and low variable costs (distributing software or data), the key is to attract many complementors to grow the ecosystem which will help grow the number of users, which will be led to increase of the numbers of complementors, and so on[32]. Thus, in innovation platforms network effects come from the increasing number or utility of complements: "*the more there are or the higher quality they are, the more attractive the platform becomes to users and complementors, as well as other potential market actors such advertisers"*[33]. Consequently, successful innovation platforms can monetize in three ways[34]: (i) The platform increase users' willingness to pay for the platform itself, by adding new features and encouraging third parties to create complements that enhance the value of the platform (e.g. subscription fee), (ii) the platform-company capture value as a portion of the sale of every complementary product or service selling by complementors (e.g., Sony collected a fee on every game sold for PlayStation[35]) and (iii) Advertising revenues.

Transactional Platforms: As transactional platforms usually create value facilitating the interchange of goods, services, or information, these platforms usually monetize charging fees for each transaction (T), for advertisement selling, or offering additional services[36]. However, the monetization vary in terms of who gets charged, what gets charged, and which side is free or subsidized[37]. For Cusumano et al (2019), in general, transaction platform creates additional value in five ways[38]: matchmaking, reducing friction in transactions, by complementary services, by complementary technology sales, or by advertising selling.

[32] Cusumano et all., Op. Cited., position 1197 to 1213.
[33] Ibid., position 361.
[34] Ibid., position 1201.
[35] Ibid., position 1218.
[36] Ibid., position 369.
[37] Ibid., position 1228.
[38] Ibid., position 1228.

3.2. THE COMPETITION WITHIN THE PLATFORM-ECOSYSTEM

As I explained, this kind of competition is not about the music streaming value chain. I insist platforms do not have a linear values chain, platforms cannot be vertically integrated, and platforms are not a downstream stage in the traditional value chain. Platforms are huge meta-organizations, in which millions, even billions of individuals are participating. For instance, it is calculated that in the YouTube platform-ecosystem are participating 2 billion active users (this are far more than the population of many countries). Thus, competition *within the platform-ecosystem* or *intra-platform competition* is about the legal rules and economic dynamic of the competition inside each meta-organization.

A. The different components of the platform-ecosystem

Ass meta-organizations, the platform-ecosystems have three different components:

i. **Platform participants:** Producers of the inventory and Consumers of the inventory.
ii. **Platform-company (or the platform operator, the platform orchestrator):** The single economic unity which owned the digital infrastructure and centrally orchestrated the overall platform-ecosystem.
iii. **The platform infrastructure.**
iv. **The platform inventory.**

Each of these components will be explained following:

i. The Platform orchestrator (the Platform Governance)

After defining platform-ecosystems as meta-organizations, Kretschmer et all (2020) described that these meta-organizations are populated by autonomous individuals who independently make decisions based on platform-company rules, for them: *"Although each organization within a platform ecosystem may be legally independent (i.e., not under common ownership), they often make investments in co-specialization or sign exclusivity*

agreements that bind them into longer-term relationships. Platform ecosystems are characterized by a large collection of relationships that are neither as limited and specific as spot market contracts nor as enduring and extensive as those within a hierarchical organization."[39].

The function of the platform orchestrator (or a platform-manger firm) is to coordinate and balance the different interests of several individuals who belong to the platform ecosystem. Thus, in general, the platform ecosystem's governance included the design of the core interaction, the strategies to create audience building, to perform the matchmaking function, to keep quality of the inventory, guarantee the product relevance to each consumer (filters), **The platform's curation task** (restricting who can join and which activities can happen)[40], as well as the creation of strategies to reinforce the platform network effects and to decide how to monetize the platform.

ii. The Platform participants

Here, the question is what individuals are participating within the meta-organization? In the traditional market, the duality of producers and consumers was identified. Opposite to platforms, consumers can start being producers. An influencer in YouTube can be the producer of music videos as well as a consumer of other music videos. Here, the participants of the platforms are:

- ✓ Producers of the music inventory: Creators of music.
- ✓ Consumers of music.
- ✓ Advertising companies.
- ✓ Companies that offer other services such as payments or logistics.

[39] Kretschmer et al., Op. Cited., page 3.
[40] Cusumano et al., Op. Cited., position 2793. Platform curation is about eliminating harmful content from the platform inventory.

iii. The Platform Infrastructure

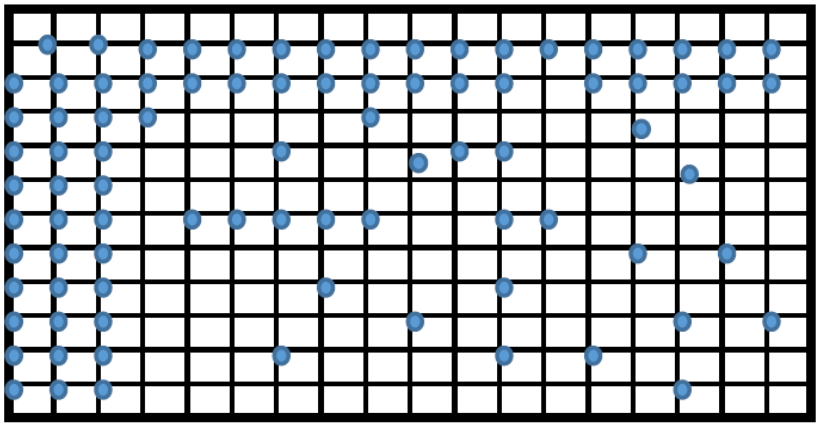
The platform infrastructure is the LAN, WAN, and End-Point-devices.

End-Point-Devices (EPD) is *"a LAN- or WAN-connected hardware device that communicates across a network. The term is more* specifically applies to Internet-connected hardware found on a TCP/IP network". Examples of End-point-devices are:

- Desktop computers and Laptops.
- Smartphones and Tablets.
- Voice-assistants hardware (e.g., Alexa, Siri).
- Video game consoles.
- Wearables (smart-watches, smart-glasses, smart-earphones).
- Media Players (e.g., Google Chromecast).
- Servers.
- Internet of Thing Devices (IoT): smart-TVs, smart-cars, smart-fridges.

In a graphic, the infrastructure of the platform-ecosystem can be represented as a decentralized network in which participants connect to the infrastructure using End-Point-devices, thus:

Figure 5. The structure of the Platform-ecosystem is different from the traditionally linear value chain



Source: Authors' elaboration.

B. ANTICOMPETITIVE PRACTICES ABOUT COMPETITION WITHIN THE PLATFORM-ECOSYSTEM

In the case of the music industry, the following are the complaints about practices that distort competition *within* the platform ecosystem:

1. The lack of curation of harmful content by the platform-manager

The curation of the platform is about eliminating harmful content such as piracy, pornography, fake news, violence, animal abuse, bullying from the platform interface.

There are several complaints about the lack of commitment of the platform managers of the music streaming platforms about illegal content, especially about piracy. The music industry participants have noted that music streaming platforms often host unauthorized uploads that are monetized by pirates before the platform manager is aware of this content. Moreover, digital piracy is often enabled by search engines due to the lack of liability about piracy for search engines. This lack of commitment is reinforced for the Safe harbor legal provision according with UGC are exempted from legal liability for copyright infringement unless they obtain actual knowledge of the infringing activity.

In the doctrine, some authors held that platform managers do not have economic incentives to curate illegal content from the platform. Furthermore, the platform managers have is economic incentives to do not stop harmful content due to in many cases illegal content helping the platforms to attract users. In this sense, for example, MIT professor Cusumano, A. Michael., Gawer Anabelle, and Yoffie, David, in the book title "*The Business of platforms. Strategy in the age of digital competition, innovation and Power*" (2019) explain that platforms do not want to be considered as media publishers is because publishers are responsible for the decisions of the editorial. And something worst is that platforms benefit from harmful content:

> ***"A Facebook executive, for example, argued that all content was good for platforms, as more content fed more users and fueled network effects. It has even been suggested that the more outrageous or shocking the content, the more traffic it drives."[41]. (Position 2856 of 4954).***

Indeed, harmful content can attract users to the platform. Here, is an economic incentive of platform for do not stop harm content. Therefore, the harmful content we are seeing in the platform interface such as piracy, pornography, fake news, violence, animal abuse, pedophilia, political radicalism (the worst of human civilization) are being encouraged by current platform managers to increase the platform profits.

And actual regulations stated that platforms are not responsible for what people publish on their sites, or the European Directives which stated the safe harbors provision that exempts hosting providers of liability for illegal content as long as the firm acts against it when the firm has actual knowledge of the infringement.

Proposed solution: To unbulding the curation activity from the platform manager. This can be (a) To introduce an autonomous committee inside the platform ecosystem with the function of platform curation or (b) To separate from the platform manager the activity of platform curation. (c) To foster the development of Artificial Intelligence algorithms that are training to eliminate harmful content for digital platforms.

2. The manipulation of Artificial Intelligence machine learning algorithms: the Power of Artificial Intelligence Algorithms

Music listening on music streaming platforms can happen in three ways:

- The user listens to the single song track.
- The User listening to an album.

[41] Cusumano, A. Michael., Gawer Anabelle, and Yoffie, David, in the book title "*The Business of platforms. Strategy in the age of digital competition, innovation and Power*" (2019).

- The User listens to a Playlist which can be: a user creates the playlist, editorial playlists, and third-party playlists.

The competition complaints refer to that playlist generated by the platform manager:

- Lack of transparency of the criteria of inclusion: the AI algorithms are confidential, and so it is hard to access what biases they may introduce.
- In general, the largest music distributors (owned by the major labels) may be more effective in gaining access to the playlists elaborated by the music streaming platforms.
- The platforms do not specify clearly if the playlist recommendation is sponsored, or not sponsored.
- The independent labels are getting far less than their fair share of access to the most popular playlists.
- Several music creators are claiming that playlists are favoring those artists signed by the major music labels and that algorithmic suggestions are discourage self-releasing artists.
- The BBC complain that a user requested a jazz station the default voice assistant would be streaming a jazz list for YouTube Platform rather than a radio broadcast.
- Platforms are encouraging artists to pay for marketing that pitch to playlists curators to achieve additional promotion using playlists. Even, one performer commented in confidence that is being created a black market in which sone playlists curators offer to promote independent performers for a fee.

Third-party playlist operators: The most successful third-party playlists operators would be appeared to be the major labels themselves (Filter of Sony, Digster of Warner, and Topsify of Universal). Although, playlists curation could be a potentially competitive market by third parties.

Proposed solution: (a) Competition authorities need to evaluate the convenience to separate the playlist activity from the platform-manager firm. (b) To foster the competition of third-party playlists to the platform ecosystem. (c) To understand how Artificial Intelligence Algorithms reinforce the platform network effects.

3. The Asymmetry of information and unfair use of data of the participants of the ecosystem

There are many complaints about the use of data collected in the ecosystem to benefit the platform-operator own products and services, as well as other platforms, the same firm manages.

Another complaint is that data information about consumers' preferences cannot be accessed by music creators. The platform manager is monopolizing this important data. Data that will be used to its benefit.

4. The internal dual role of the platform manager as the creator of the music inventory of the platform

Platform managers (e.g., Google LLC and SONY) are starting to create music tracks with artificial intelligence technology and not with humans.

For instance, SONY CSL (Computer Science technology) is creating music with AI:
https://www.youtube.com/watch?v=LSHZ_b05W7o
https://www.youtube.com/watch?v=lcGYEXJqun8

Another example is Deep-Mind of Google LLC:
https://www.youtube.com/watch?v=Y8UawLT4it0

Regulators need to be aware of the creation of music by the platform managers using artificial intelligence technology due to:

- Harm to innovation: the production of music using AI technology decreases the music creation innovation by humans. Artificial Intelligence technology is starting to be replaced traditional musicians, especially electronic music genres. A genre in which UK artist has been famous worldwide.

- Harm using innovation without limits: The development of Artificial intelligence without limits can create social and economic problems due to the overproduction that it can be generated. While a human takes hours to develop one work of music, AI can develop several pieces of work in a few minutes.

- Harm to Consumers: Platform-operator will have incentives to manipulate and influence consumer choices.

- Harm to society: Artificial intelligence technology is being developed to gain profits by platform managers. For instance, actual platform managers are not investing in developed and training algorithms that benefit humanity. Powerful technology such as AI must be used for social welfare and not just for a few companies to make money.

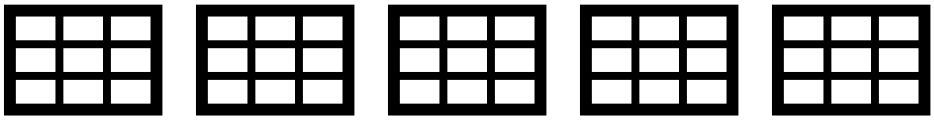
Proposed solutions: About the fact that platform-managers of music streaming platforms have started to produce music, it would be necessary:

A. Competition authorities need to prohibit the internal dual role of the platform manager as a manufacturer of music.
B. It is necessary the introduction of an ARTIFICIAL INTELLIGENCE ETHICAL COMMITTEE inside each platform ecosystem with autonomy from the platform manager.
C. It is urgent the creation of a national ethical committee about artificial intelligence technology and fosters academic investigations about the problems of overproduction and limits to the development of this technology.

3.3. COMPETITION BETWEEN PLATFORMS-ECOSYSTEMS META-ORGANIZATIONS

This kind of competition and how the supply of music has changed since the introduction of music streaming platforms. Platforms-ecosystems compete by trying to pull producers of music and consumers of music to its ecosystem.

PRODUCERS



Spotify **YouTube** **Apple Music** **Amazon Music** **Deezer**

CONSUMERS

3.3.1. THE COMPETITIVE DYNAMIC ABOUT COMPETITION BETWEEN PLATFORM-ECOSYSTEMS

The competitive dynamic about competition between platform-ecosystems is about to generate positive network effects. As I will describe:

First: Engage multiple sides of one market (the start-up phase)

At the beginning of the platform creation, after creating a plug-and-play infrastructure without any value, the platform company needs to attract users to the platform. In this first stage, the platform-company needs to resolve the so famous 'chicken and egg problem': *Producers will not participate without consumers and vice versa.* So, to resolve this problem, the platform company need to implement different strategies to pull consumers and producers to the platform[42].

[42] The doctrine describes several strategies to overcome the chicken and egg problem. See Johnson., Op. Cited., position 3157 to 3270, and Sangeet., Op. Cited., position 2972 to 3557 (Section 4).

Second: Generate network effects (the growth phase)

Once producers and consumers come to the platform, the next step is to generate network effects. In general, there are four kinds of network effects: same side or direct network effects (positive and negative) and cross-side or indirect network effects (positive and negative)[43].

But contrary to what is generally thought, network effects are not just about increasing the number of platform users. This is because there are bad users who produce the opposite effect. For example, some bad users provoked that many other users leave the platform, or the so-called Atari effect problem in which due to lack of platform's control, third-party's developers make poor quality products or the abundance problem which can generate reverse network effects[44].

Therefore, to avoid platform users leaving the platform, the platform company needs to perform its functions of curation and matchmaking effectively. The more efficiently a platform can match its users, the stronger its network effects will be and the more transactions the platform will be enabled[45]. On the opposite, without an efficient system for matchmaking, a platform won't be able to connect the right consumers with the right producers, so the network will grow, users will not make transactions, they will leave the platform and the network will lose its value.

And as the platform network is constantly growing, the matchmaking function becomes more complex. This is the reason why platform companies have developed AI algorithms able to match the best two parts of the network for each bilateral transaction. For example, today one AI-algorithm dispatch the best driver for each passenger selects which products are shown to each consumer, and elects who person better matches which other person in date platforms. As well, "*In the traditional publishing industry, an editor would have made decisions on which books were taken to market. In a traditional funding model, a credit scoring agent would have made a decision on what should be funded. On Amazon or Kickstarter, the book that should go to market or the project that should be funded is increasingly decided by*

[43] Geoffrey et al., Op. cited., position 655.
[44] Paul., Op. Cited., position 3970.
[45] Johnson., Op. Cited., position 2119.

algorithms"[46]. Thus, nowadays, AI algorithms are performed managerial functions of resource allocation and decision making[47]. And this is the reason why in common speaking AI-algorithms are called the new middle managers or the new decision makers[48].

In this way, platform companies using AI technology can enable transactions by identifying the best two parts for each singular transaction in the 'platform-ecosystem'. And the reason why Sangeet alleged (2015) "*In a networked age, we are moving from a world of command and control to a self-*serve *world where user participation is encouraged through an invisible hand-powered by data, APIs, and algorithms*"[49].

And when the platform-company performs its matchmaking function effectively, it is reinforcing platform network effects because *"as more value is created and exchanged by the users of the platform. This, in turn, attracts more users, scaling the value further. Greater value creation attracts greater value consumption and vice versa"*[50]. So, consumers and producers will participate on the platform that has the strongest network effects[51]. Thus, network effects guarantee the repeatability of interactions and make the platform more valuable. Hence it is said that *"Network effects hold the key to the long-term retention of producers and consumers*"[52].

And this is important because while linear businesses are focused on improving the internal process of production (production efficiency), platform businesses are focused on improving the quantity and quality of the transactions between producers and consumers in their ecosystem (interaction efficiency)[53]. In this line, Sangeet (2015) held that "*As businesses move* from *pipe scale to platform scale, they will reduce focus on the ownership of resources, which formed the basis of traditional competition, and will instead compete on their ability*

[46] Sangeet., Op. Cited., position 611.
[47] Ibid., position 611.
[48] Ibid., position 611.
[49] Ibid., position 648.
[50] Ibid., position 505.
[51] Ibid., position 2525.
[52] Ibid., position 2525.
[53] Ibid., position 594.

to facilitate interactions between producers and consumers in their ecosystem."[54]. Accordingly, to this author "*In a platformed world, value is created in interaction between users, powered by data. Data science improves the platform's ability to orchestrate interactions in the ecosystem. As value moves from organizational processes to ecosystem interactions, the focus of efficiency shifts from the enhancement of controlled processes to the improvement of the platform's ability to orchestrate interactions in the ecosystem*"[55].

The ultimate consequence of this dynamic is that in the new platform economy, "*Platform businesses scale through network effects"* [56]. Moreover, platforms with strong positive network effects (direct or indirect) often benefit from a winner-takes-all dynamic (the winner usually aggregates all producers and consumers onto one platform because of every-strengthening network effects)[57].

However, Cusumano et al (2019) held that network effects are not enough to dominate the market because there exist other important competitive constraints drivers such as:

(1) Platform multi-homing.
(2) Platform niche competition.
(3) The development of new technologies, and
(4) Low barriers to entry[58].

Platform multihoming occurs when users engage in a similar type of interactions on more than one platform[59]. Multihoming weakened network effects because producers and consumers may easily participate on multiple platforms[60]. Opposite, without the possibility of multihoming, platforms can develop strong network effects (e.g., when app developers co-develop for one OS, they incur high multihoming costs). Likewise, a fragmented market with

[54] Ibid., position 365 to 384.
[55] Ibid., position 594.
[56] Ibid., position 505.
[57] Sangeet., Op. Cited., position 2525.
[58] Cusumano et al., Op. cited., position 681 to 981.
[59] Geoffrey et al., Op. Cited., position 3586.
[60] Sangeet., Op cited., position 2837 to 2852.

niche platforms reduces network effects[61]. Additionally, network effects can be weakened or eliminated as new technologies are developed[62]. In a new platform economy, innovation shifts from in-house R&D to open innovation (functional integration and network orchestration)[63]. Even some authors held that in this new age of "hyper-competition" technological advances drive shorter cycles on everything (including monopolies)[64].

Similarly, when exits low barriers to enter the market, new entrants can enter the business on the supply side and weakened network effects[65]. Contrary, in markets where barriers to entry are high, it exits a higher probability of the market tipping toward one or a small number of platforms. There are also unique barriers to entry created by network effects: an existing stock of complements, as a replicating barrier (when the number of complementors of one platform grows it becomes increasingly difficult for a new platform to enter late and replicate this ecosystem), or it creates complex switching costs (e.g., to switch from Linked-in platform, all contacts of one person must switch as well)[66].

Considering these factors that weaken the platform network effects, platform companies are always trying to:

- Limit platform multihoming.
- Discourage niche competition.
- Improving innovation,
- Reinforcing barriers to entry.

In sum, in a new platform economy, positive network effects are the main source of value creation, competitive advantage (interaction efficiency), the creation of barriers to entry, and platform scale[67]. And this competitive advantage is what gives the platform market

[61] Cusumano et al., Op. Cited., position 732 to 768.
[62] Ibid., position 803 to 945.
[63] Geoffrey et al., Op. Cited., position 637.
[64] Authors as Richard D'Aveni and Rita Gunther McGrath. Cited by Geoffrey et al., Op. Cited., position 3517.
[65] Cusumano et al., Op. Cited., position 769 to 786.
[66] Ibid., position 789.
[67] Geoffrey et al, Op. Cited., position 381.

dominance. Consequently, platform companies are constantly implementing strategies to reinforce platform positive network effects, and impeding the disintermediation of the platform.

3.3.2. ANTI-COMPETITIVE PRACTICES ABOUT COMPETITION WITHIN THE PLATFORM-ECOSYSTEM

1. **The attempt to monopolize the End-Point-Devices (EPD)**

There are several strategies implemented by current platform managers aimed to monopolize all End-Point-Devices. For instance:

APPLE INC

The firm Apple Inc is the platform manager of two platform-ecosystems:

(i) **Apple iOS innovation Platform** (1 billion users worldwide).
(ii) **Apple App-Store transactional Platform** (more than 4 million apps in the inventory).
(iii) **Apple Music streaming platform** (more than 90 million songs in the inventory and 78 million subscribers worldwide).

In addition, the firm Apple Inc is the manufacturer of the following End-Point-Devices (EPD):

-
- Apple TV HD
- Apple Watch
- Apple Watch SE
- HomePod mini
- iMac
- iPad
- iPhone
- MacBook Air

In addition, Apple Inc is the platform manager of the iOS platform which is the Operating system that is used in EPD that Apple Inc manufactures.

Apple Music can be played on the following devices:

- Phone.
- iPad.
- Apple TV.
- Mac.
- PC. Update to the latest iTunes.
- Android. Download on Google Play.
- Samsung. Smart TV.

- **GOOGLE LLC**

The firm Google LLC is the platform manager of three platform-ecosystems:

(i) **Android innovation platform** is the Operating system that is using most of the End-point-devices nowadays (2.5 billion active users worldwide).
(ii) **Google Search Platform** (4 billion users worldwide).
(iii) **YouTube music streaming Platform (**2 billion users worldwide).
(iv) **Gmail Platform** (1.5 billion users worldwide).

In addition, the firm Google LLC is manufacturing the following End-point-Devices (EPD):

i. Google Pixel: smartphones, tablets, laptops, earbuds, and other accessories.
ii. Google Nest: smart home products including smart speakers, smart displays, digital media players, smart doorbells, smart thermostats, smoke detectors, and wireless routers.
iii. Google Chromecast: digital media players.
iv. Fitbit: activity trackers and smartwatches.
v. Google Glass: wearable computer with an optical head-mounted display and camera that allows the wearer to interact with various applications and the Internet via natural language voice commands.

About competition between platforms, the monopolization of the End-Point-Devices (EPD) is not about the monopolization of the production of distribution of one product (as traditional product competition), **it is about the control of the access points to the infrastructure of each platform-ecosystem.**

2. **Complaints about distorted the competition in the App-store transactional Platforms**

In March 2019, Spotify firm issued a formal complaint to the European Commission against Apple Inc for abusing its dominant position hold in the Apple App-Store transactional Platform due to:

(a) Apple Inc charges an exploitative high fee for each transactional in-app purchase (30% commission).
(b) Apple Inc ties to use its additional service of Apple payments in each transaction made over the Apple app-store transactional platform.
(c) The fee of 30% which music app developers are forced to pay per transaction, Apple music's services don´t have to pay in the transactions made in the Apple App-store.

3. **Tying and bundling Strategies between platform-ecosystems, products, and services**

Finally, there are several complaints about the business strategies that are distorting competition in the markets where the firm's Apple Inc and Google LLC are participating.

Strategies implemented by the firm Google LLC

i. **The distortion of the competition due to the firm Google LLC as platform-manager of the 'Android OS innovation platform-ecosystem' and the platform-manager of the 'Play app-store transactional platform-ecosystem'**

The fact that the firm Google LLC is the manager of the 'Android innovation OS Platform' and the 'App-store transactional platform' is causing incentives and the ability for the following anticompetitive practices:

a) The use of sensitive commercial information gets into in one platform but use in another. For instance, the use of commercial information gets in the app review process to be accepted in the app store for later developing its products.
b) Tying and bundling strategies such as the household of the API in the App Store and not in the Innovation platform or the updates of the operating system in the App-store platform and not in the innovation platform.
c) Google LLC shares a proportion of revenues from Play-Store transactions with OEMs when these firms set the Play App Store as the default App-store and do not preinstall other app stores in the devices.
d) The self-preferencing of its products in the App Store.

ii. The distortion of the competition due to the firm Google LLC is platform-manager of the 'Android OS platform' and the platform-manager of the 'Google Search Platform'

The fact that the firm Google LLC is the manager of the innovation OS Platform, and the Google search platform is causing incentives and the ability for the following anticompetitive practices, most of them tend to improve the Google Search Engine:

a) To make Agreements of Share Revenue with OEMs of Android devices to reinforce the network effects of the Google platforms (e.g., preinstallation or default setting of Google Search app and the YouTube App).
b) Placement agreements in which Google LLC pays OEMs for each device in which the manufacturers pre-install the Google search app as the default search engine on device browsers.
c) Google LLC pays revenues to browsers vendors when they direct the web traffic to Google Search.

d) The monetization of one platform with the revenues of another platform (e.g., offer for a free price the Access to the Android platform but monetized the Google search platform and share the revenues with Android developers).
e) The implementation of strategies that give a competitive advantage in personalized advertising services (e.g., Google Sandbox proposals).
f) Limit innovation of third-party browsers engines.
g) The restrictions of third-party voice assistants to access the same functionalities as Google´s Google Assistant.

iii. The implementation of strategies to maintain and reinforce the platform network effects

When assessing the dynamics of platform competition, it would be realized that many of the strategies implemented for the platform manager are about to reinforce the platform network effects or impede the loss of the platform network effects. With this approach would be easier to understand the following strategies implemented by the Firm Google LLC:

a) The restriction of web apps and sideloading undermine the network effects of the Android ecosystem.
b) The restriction of Cloud gaming platforms.
c) The obligation of owned payment system to disintermediate its competitor platforms from consumers.
d) The antifragmentation agreements to avoid the loss of the networks effects of the Android Platform.

Strategies implemented by the firm Apple Inc

i. The distortion of the competition due to Apple Inc is the platform manager of the "iOS innovation platform-ecosystem" and the platform-manager of the "Apple Play App-Store transactional Platform-ecosystem"

a) The use of sensitive commercial information gets into in one platform but use in another. For instance, the use of commercial information gets in the app review process to be accepted in the app-store for later developing its own product (e.g., use the information of Spotify downloads to improve its own products).
b) Apple limiting the functionality of web apps in the iOS platform: Apple uses the restriction of WebKit, the sole permitted browser engine on iOS, to limit the success of web apps which decreases the network effects of the iOS and App Store.
c) Apple´s App Store is the only App-store within the iOS ecosystem.
d) Other App-stores cannot be downloaded from the Apple App Store. For instance, one app store specialized in downloading music apps.
e) Apple Inc has restricted access to some APIs to itself. This is Apple Inc erect barriers to extension developers closing APIs not just to control the quality of the inventory, but to keep revenues that the platform generates.
f) Apple Inc has restricted access to some APIs to a few firms (e.g., contactless payment technology).
g) The webKit restriction to only use the Apple browser engine help to maintain the network effects of the Apple App Store.
h) The obligation to use the Apple payment system which disintermediates its competitors from consumers.
i) Geoffrey et al (2016) held that Apple is now endeavoring to use its iPhone platform to envelop the markets for mobile payment systems, wearable technology, and assistant voices technology[68]. For instance, to restrict the ability of third-party voice assistants to access the same functionalities that Apple Google Assistant.

[68] Geoffrey et al., Op. cited., position 3729.

CONCLUSION:
THE RECOMMENDATION IS TO RECOGNIZE LEGAL PERSONALITY TO PLATFORM-ECOSYSTEMS

There are many complaints about competition problems about digital platforms caused due to unduly monopolization strategies implemented by platform managers, an underenforcement of competition law, and a lack of understanding of how platform-ecosystems works.

For many regulators, digital platforms are just objects or pieces of technology that are owned by one digital firm. Therefore, for many regulators, the regulation about digital platforms is about to regulate the property rights of some firms over one software (the digital platform). However, regulation about digital platforms is about to introduce democratic values inside a novel meta-organization formed at the beginning of the digital age. These democratic values need to be implemented in the governance of the meta-organization with the aim that novel technologies work for social welfare and to build a peaceful human civilization. Novel technologies cannot just obey to make profits for a few firms without limits and causing distortion in the competition in several industries, damaging so many small businesses. To reach this point, one step would be to recognize legal personality to the Platform-ecosystem.

It is recognized legal personality to platform-ecosystems it would imply, to more transparency about the creation and distribution of value in these organizations, legal liability, transparency in taxation, the recognition of a fair remuneration to creators of the inventory of the platform, the enforcement of a code of conduct by the platform-manager, the introduction of internal ethical committees of artificial intelligence technology and a fair level playing field with its competitors.

The recognition of the legal personality of the platform ecosystem would imply that this meta-organization is not acting more in the shadows of the law.

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