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Conference Paper

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ITS Online Event, 14-17 June 2020

Provided in Cooperation with:

International Telecommunications Society (ITS)

Suggested Citation: Noam, Eli M. (2020) : An Open Video System (OVD) to Overcome Market Power in Online Video Platforms, ITS Online Event, 14-17 June 2020, International Telecommunications Society (ITS), Calgary

This Version is available at:

<https://hdl.handle.net/10419/224868>

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An Open Video System (OVD) to Overcome Market Power in Online Video Platforms¹

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June 2020

I. The Market Structure of Online Video

Few questions are fraught with more long-term implications than the way we shape our communications system. If the medium is indeed the message, and if these messages influence people and institutions, then tomorrow's media, and today's media policies, will govern future society, culture, and economy.

It is therefore important to recognize that we are on the verge of an enormous leap in media and communications, and consequently also of one of its major disruptions of social and economic arrangements. It is the transition of TV media into its third generation -- following broadcasting and multichannel-- online video. There are many positive aspects to this emerging online video system, but also troubling ones. In no particular order, the latter include privacy, security, morality, piracy, accessibility, affordability, national culture, consumer protection, and anti-social behavior. All these—and others-- are significant problems. And yet, arguably, the

¹ This article is based on the forthcoming volumes by the author: Eli Noam, *The Content, Impact, and Regulation of Streaming Video: The Next Generation of Media Emerges*, Edward Elgar Publishing; and Eli Noam, *The Technology, Business, and Economics of Streaming Video: The Next Generation of Media Emerges*, Edward Elgar Publishing.

major policy issue is *digital dominance*. Many other problems flow from such strength. (Conversely, several problems might be alleviated by it.)

It is complex and expensive to do online video platform services well. Multiple systems need be in place and be integrated. Processes must operate at almost lightning speed, with great reliability, easy scalability, user friendliness, and flexibility of configuration. They must be secure, with marketing and branding advantages, and able to implement technologies for content and advertising such as individualization. This favors large providers that have the advantage of economies of scale and scope, and the related factors of network effects, economies of distance and of data, and the synergies of vertical integration.

There are significant advantages to scale in content platforms. The largest providers have the greatest choice in content and advanced technology, which attracts users. Users, in turn, attract other users through network effects. A large user base attracts content providers (at a lower price), advertisers (at a higher price), and still more users (at a higher price.) At the same time, it also lowers its unit cost. Thus, large providers have a distinct advantage. For example, in generating the functionalities of interactivity, P2P operations, and immersion, all of which require high capital outlays to create but they are relatively cheap to operate subsequently. There are also major advantages of connection to data, to advertising, and to content aggregation. In combination, economies of scope, scale, and verticality create winner-takes-all scenarios for infrastructure and for content platforms, and to a highly concentrated online video industry.

Media concentration, of course, is nothing new.² What is different this time is its global extension by the top providers.

Table 1 provides our calculations of the concentrations of various sub-markets of online video in the U.S., as measured by the index known as the HHI. (An index over 2,500 is considered to indicate a highly concentrated market).

Table 1: Market Shares of Video Platforms (USA)³

Media Type	HHI	Market Leaders
Internet Service Providers, 2018 ⁴	2,669	Regional Cable Operator (30%) Regional Telecom Wireline Operator (16%)

² Noam, Eli. *Who Owns the World's Media?* New York: Oxford University Press, 2016.

³ Full data tables are provided in the two volumes by the author listed in footnote 1.

⁴ Based on reported "Data Revenues" from company annual reports. Telecom wireline and cable companies in the U.S. operate regionally, and a regional market concentration is therefore more instructive than national figures, since there is almost no intra-industry overlap. The two major telecom wireline ISPs are also the major nation-wide

		National Mobile Operators (53%: Verizon: 23.5%, AT&T: 15.3%, T-Mobile/Sprint: 14.2%)
Public Content Delivery Networks, 2017/18 ⁵	1,828	Akamai (31%) Amazon/Fastly (16%) Google (16%)
Public Online Infrastructure Platforms, 2017 ⁶	2,611	Amazon Web Services (41.5%) Microsoft Azure (29.4%)
Subscription-Based Streaming Video Content Platforms, 2019		
USA ⁷	3,097	Netflix (49.4%) Disney (Hulu and ESPN) (20.2%) Amazon Prime Video (10.1%)
Europe (18 Countries) ⁸	3,221	Netflix (52%) Amazon Prime Video (21%)
Advertising-Supported Video Platforms, 2018 ⁹	1,916	Google YouTube (33.2%) Verizon Media (16.4%) Facebook (15.2%)
Live TV Streaming Services, 2019 ¹⁰	2,218	Disney Hulu Live TV (29.1%) Dish/Sling TV (29%) Google YouTube TV (17.3%)
Social Media Streaming Platforms, 2018 ¹¹	3,537	Facebook (incl. Instagram) (41.9%) Google YouTube (38.7%)

wireless providers, and their national wireless market shares are added to their regional wireline shares. their market shares are based on reported revenues for wireless “Data Services.”

⁵ Developed from company reports.

⁶ Calculated with data from Coles, Cameron. “Cloud Market in 2018 and Predictions for 2021.” *McAfee*, 30 July 2018, <https://www.skyhighnetworks.com/cloud-security-blog/microsoft-azure-closes-iaas-adoption-gap-with-amazon-aws/>.

⁷ Calculated from market shares developed using 2019 revenue data. Where revenue data were not directly available, they were calculated by multiplying the number of subscribers by annual subscription price.

⁸ Calculated with data from Kagan Research, as reported in O’Halloran, Joseph. “Five Services behind 89% of European subscription streaming revs.” *RapidTVnews*. March 06, 2019. <https://www.rapidtvnews.com/2019030655357/five-services-behind-89-of-european-subscription-streaming-revs.html#axzz5hPM2I6dE>.

⁹ Calculated from market shares developed by obtaining 2018 unique monthly visitors to various streaming services. *Statista*, 2018, https://lh6.googleusercontent.com/xAwi6vaYS77JLLqTdRyScgQxOD-kyP0_dVzJeH0_h-vVZEeevwWWvmwqVyPPWLMmf_uu8zCluoj7CCFyimPkSFIS1P8563ST-PslwruzE7I8tG9Qji6p5TS7JplbioQiQZVI0kJ7.

¹⁰ Calculated from market shares developed from 2019 subscription and user numbers. Data from <https://variety.com/2019/digital/news/hulu-live-tv-beats-sling-top-streaming-pay-tv-research-1203406138/> <https://www.fool.com/investing/2019/10/29/3-reasons-sony-wants-to-sell-playstation-vue.aspx>.

¹¹ Calculated from market shares developed from 2018 minutes spent watching particular advertising supported outlets. Also used: Tran, Kevin. “Millennials still watch TV despite cord-cutting increases.” *Business Insider*, 1 Nov. 2017, <https://www.businessinsider.com/millennials-still-watch-tv-despite-cord-cutting-increases-2017-11?r=UK&IR=T>.

		Amazon Twitch.tv (16.6%)
U.S. Online Advertising Market, 2019 ¹²	1,940	Google (37.1%) Facebook (20.6%)
Content Platforms for User-Generated Content, 2015 ¹³		
USA	2,968	Google YouTube (54%)
UK	2,651	Google YouTube (51%)
France	3,258	Google YouTube (52%) Vivendi Dailymotion (23%)
Japan	3,633	Google YouTube (53%) NicoNico (28%)

Thus, we observe a high market power in online media activities. This is not surprising. Concertation has always been extreme in telecom-type infrastructure networks, which were considered, for a long time, a “natural” monopoly. It has also been high in TV networks, film distribution, major websites, and IT technology. The same is true for newer internet activities such as social media, web browsers, search engines, etc. Given all the incidence of market power in the sub-elements of online video, it would be surprising if there no such power would emerge for online video as a whole.

When the video platform market is uncompetitive, the results are likely to be:

- Market power over users who could not easily switch. (“consumer lock-in”)
- Reduced competition, higher prices, and lower innovation (“monopoly power.”)
- Difficulty of users of one video cloud to interact with users and elements of other clouds. (“fragmentation”)
- A vertical chain of service elements closed to most outside providers (“walled garden”.)
- The reduced diversity of content sources (“narrowcasting”.)

¹² Calculated with transnational data from Wardle, Nikki. “Amazon Advertising vs. Google Ads.” *Tribute Media*, 2 Nov. 2018, <https://www.tributemedia.com/blog/new-kid-on-the-block-amazon-ads>.

¹³ Calculated with data from “International Communications Market Report 2015.” *Ofcom*, 10 Dec. 2015, https://www.ofcom.org.uk/data/assets/pdf_file/0020/31268/icmr_2015.pdf, using also data from “Active reach of selected online video websites as of August 2015, by country.” *Statista*, 10 Dec. 2015, <https://www.statista.com/statistics/284801/active-online-reach-of-selected-online-video-sites-by-country/>.

- A constricted political dialog; and a resultant stronger political influence of the platform (“gatekeeping.”)
- Market power over outside providers of hardware, software, transmission, and content, who fear exclusion. (“foreclosure.”)

1. Options to Reduce Digital Dominance in Online

Video Platforms

Given the passion over a concentration in the information sector, it is predictable that market power in the cloud and online video area will lead to regulatory responses. The obvious reason for the stronger concern over concentration in media and information is that most people desire a greater diversity in their information sources than in their computer hardware. They wish more choices for themselves and for the political process. They consider media to be a different category from other industries, with a key role in politics and culture.

There are a variety of basic approaches to deal with market power, especially in an essential service. They are all problematic in one way or another. Space does not permit their discussion.

- Separation of infrastructure platform from content platforms.
- Market share ceilings.
- Governmental or public service provision of infrastructure and content
- Restrictions of extensions to other product lines;
- Unbundling of product elements
- Non-approval of mergers, and divestitures of parts of existing firms.
- Ownership and cross-ownership restrictions.
- Foreign ownership limitations and quotas on foreign content.
- Establishment of a public utility status for platforms
- Interconnection or Access Requirements

We will now discuss a proposal based on the last option, that of access.

II. The Open Video System

1. Overview

The option proposed here is to establish what we call the Open Video System. It is based on access, not on breakup. It incorporates several aspects of other approaches. There are three basic elements to this system.

1. *There are access rights to infrastructure and platform elements, where significant media market power (SMMP) exist. Such access rights exist for the endusers as well as for the users' delegated information intermediaries.*
2. *Such access would be accomplished through interfaces that must be offered by platforms that possess SMMP. These are known as Applications Program Interfaces (APIs), a way to let software by other parties interoperate with the platform's software.*
3. *Conditions of access would be governed by the non-discriminatory principle of "most favored nation," subject to arbitration by a self-regulatory process.*

We will now discuss these elements, starting with a key element, the information management intermediaries.

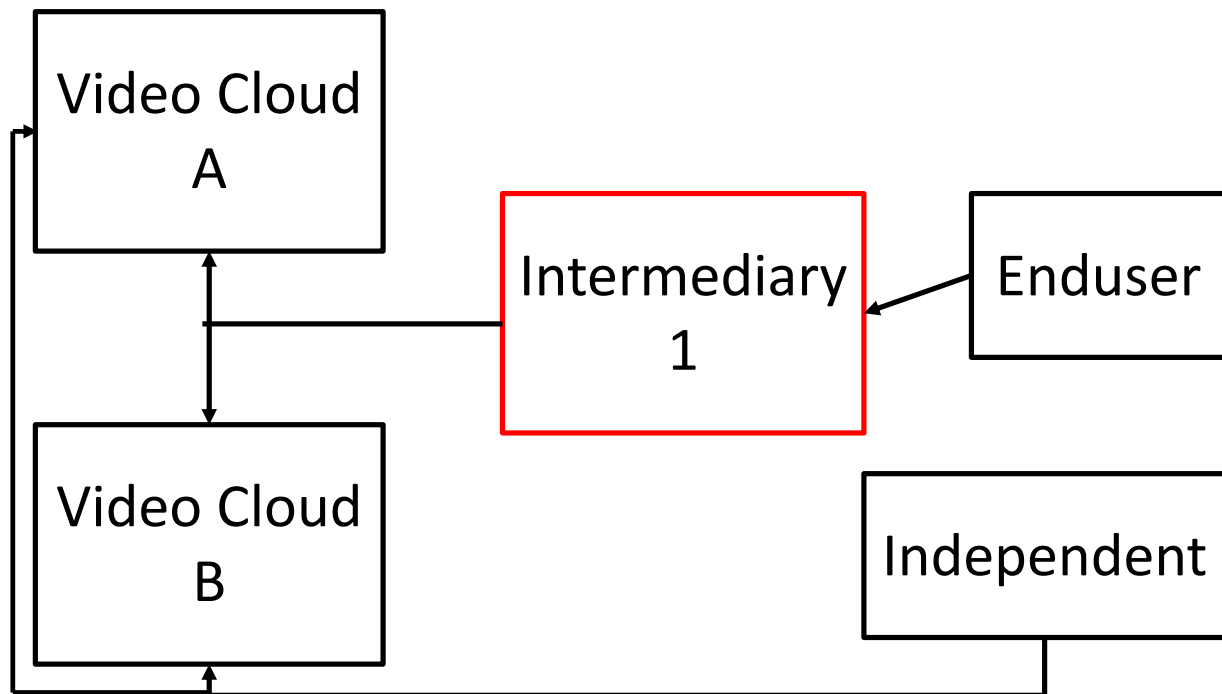
2. Information Intermediaries

The key to dealing with market power is to give users a meaningful choice among providers.¹⁴ And, where some large companies hold advantages that are insurmountable in the short term, to give smaller providers the opportunity to compete. A meaningful user choice requires an enabling of a new type of operator, namely "information intermediaries" that would act in behalf of customers to seek the best options. Most consumers are busy and technically unsophisticated. To make the option of choice practical, they could delegate control of their data

¹⁴ In the UK, the 2019 Report of the Digital Competition Expert Panel, appointed by the government, recommended more competition rather than break-ups or restrictiveness. It proposed a new regulatory body to force firms to restructure themselves so as to enable users to control their data and switch among providers. *The Economist*. "Competition, not break-up, is the cure for tech giant's dominance." March 13, 2019. <https://www.economist.com/business/2019/03/13/competition-not-break-up-is-the-cure-for-tech-giants-dominance>; The EU's competition Commissioner advocated a regulatory approach to data use. Lomas, Natasha. "Don't break up big tech — regulate data access, says EU antitrust chief." *Tech Crunch*. March 11, 2019. <https://techcrunch.com/2019/03/11/dont-break-up-big-tech-regulate-data-access-says-eu-antitrust-chief/>.

to professional intermediaries. Figure 1 shows their placement. Intermediary 1 operates between the enduser and the several video platforms, A and B. The graph also shows the access of other providers, such as Independent, to those platforms.

Figure 1:



For the selection of content, the information intermediaries would review the content catalogues of multiple platforms and the price for viewing. Based on their own information about the films, plus the user preferences communicated to them, plus past user choices, their own algorithms would make choices or recommendations.

The information intermediary's functions might include:

- Search for content per instructions and parameters set by the enduser
- Find the most favorable option in terms of content and price, and negotiate in behalf of the enduser for favorable terms.
- Filter out undesirable videos, such as those with profanity, sex, violence, or hate, per enduser instructions

- Deal with payments to platforms for subscriptions and single videos, and bill enduser periodically.
- set the privacy settings in behalf of their clients, monitor what happens to that data subsequently, and collect royalties for the use of customer data, where such use was agreed upon.
- deploy their own algorithms, or those of independent algorithm providers
- set up and update technology tools, such as encryption, anonymization, and other techniques to enable users to create electronic moats around their information
- Select infrastructure elements of the pathway from the video provider to the enduser.
- May have a selection role of advertisements, based on instructions by users in which products and types of ads they are interested in.

This system creates user choice in search, algorithms, data control, content filtering, and infrastructure.

3. Business Models for Information Intermediaries

There are numerous business models for the information intermediaries:

- A for-profit subscription-based company offering a personal information management platform-as-a-service.
- A charitable provision by an NGO such as a church organization.
- An ideological provision by organizations with a definite perspective, as a service to its adherents.
- A community effort by an open-source type cooperative.
- An advertising-based service, with the ability to insert ads that reach its consumer clients.
- A vendor-oriented service, with commission payments from platforms for mediating access to buyers
- A subsidized service, as an offshoot of public service broadcasting or of a public university.
- An offering by a large tech or media company as part of its more general applications suite, for example by Google as part of its search functionalities. (In that case, the

company would have to demonstrate that it would not give any preference to its own content platform.)

- A feature by a consumer electronics company such as Samsung, baked into its TV set.
- A collaborative operation by rival smaller platforms as a way to divert some viewers from the dominant platform with SMMP.
- A service by an infrastructure network company such as Verizon or T-Mobile as a feature of its transmission network.
- A feature by credit card companies as a supplementary service to their customers
- Commissions for the authorized sale of anonymized user data or bulk data to third parties (data brokerage)
- Commissions from app developers for app sales through the intermediary (similar to other "app stores")
- Fees by third-parties for extra services, such as analytics-as-a-service, for example on how video products are appreciated by customers
- A membership model in which the users of a platform, such as an organization of independent film makers, become participants in a cooperative data management operation, supported by their membership fees plus possible additional fees.
- An industry-wide cooperative of multiple for-profit service providers and platforms.¹⁵

Most likely are hybrid models that combine several of these approaches. For example, a “freemium” model with the free use of basic functionalities, but additional service level requiring payment.¹⁶

4. Access Arrangements

Video platforms with significant market power would be potentially open to rival providers of content or services in several ways, including through the proprietary interoperation arrangements. These APIs are designed to allow outside programmers and companies access to a

¹⁵ An example was the company Respect Network, which created the world’s first trusted personal cloud network. All members subscribed to the Respect Trust Framework as a model for personal data sharing <https://respectnetwork.wordpress.com/respect-trust-framework/>. And Reed, Drummond. “Respect Network Ends the Year With Four New Development Partners.” *Respect Network*. December 21, 2012.

¹⁶ For example, this is the model for Mydex, Meeco, and digi.me.

portion of the system, without giving them full access. For instance, Netflix does not provide access by 3rd parties to its film and TV series catalog. However, the company used to provide a free public API which gave such access. This allowed independent programmers to plug in and develop consumer products. An example was the app “A Better Queue”, which made recommendations of movies worth watching on Netflix. This service, and others like it, were ended when Netflix closed off the API in 2014, limiting access to select partners.

There have been no regulatory requirements for APIs access arrangements. But nothing on a constitutional level prevents government regulation of APIs.¹⁷¹⁸ In other cases, companies with market power have been compelled to open up their information and share it in the past.¹⁹²⁰²¹ There is also an issue of cybersecurity to consider. Making API access fully public makes it easier to hack the platform. To deal with that, there could instead be a list of acceptable 3rd parties that can gain these APIs, as long as no favoritism is provided to allies of the company.

The overall principle should be that companies with SMMP need to give an API access that is sufficient to achieve the remediation of their dominance by providing consumers with realistic alternatives.

5. Administration

¹⁷The EU enabled, in its Payment Services Directive 2 (PSD2), open banking (through the access to banks APIs). The UK required the nine largest banks to give government-licensed startups access to the banks’ APIs and user data down to the transaction level. However, this regulation only applies to banking.

¹⁸Arguments have been made that requiring the granting of APIs and access to program listings amounts to “compelled speech” and thus violates the First Amendment of the U.S. Constitution. Fiest, Max. “Why a Public Interest Data Access Law Would Likely Trigger First Amendment Scrutiny”. SSRN April 2019.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3374091

¹⁹ “Antitrust: Commission ensures compliance with 2004 Decision against Microsoft.” *European Commission*, 22 Oct. 2007, http://europa.eu/rapid/press-release_IP-07-1567_en.htm?locale=en.

²⁰ There have been calls for API openings, especially after Netflix pulled its public APIs in 2014. Microsoft, in order to get EU regulatory approval of its purchase of LinkedIn, agreed to give other companies access to certain APIs related to Microsoft Office’s integration with social media services “A bittersweet win over Microsoft.” *The Economist*, 17 Sept. 2007, <https://www.economist.com/business/2007/09/17/a-bittersweet-win-over-microsoft>.

²¹ APIs can be designed to give as much or as little functionality or access as the programmer determines. For example, they can be designed to only give access to a database of information. Similarly, the access via API could be for a simple yes-no click action from the outside, or to a more complex interaction with the software. This might include the ability to use an independent algorithm, for example to affect user selection of content, both inside one platform and across multiple platforms. Wenger, Albert. “World After Capital: Bots for All of Us (Informational Freedom).” *Continuations*, 10 Dec. 2018, <https://continuations.com/post/180985743645/world-after-capital-bots-for-all-of-us>.

The administration of access arrangements would be based on basic principles set by a governmental regulator. But the implementation and specifics would be by a consortium of stakeholders, from the private sector, and importantly, also from the NGO sector. Thus, the 3rd element of the system is *self-administration and arbitration*.

One of the main tasks for the self-regulatory mechanism would be to delineate market definitions. To the extent that no agreement is reached, it would be taken up by the regulatory agency.

User choice does not mean that all options will be available. Regulators could set ceilings or floors on certain transactions. For example, child porn or cyber-bullying might be restricted on any platform and through any intermediary. These regulated limits need not be identical globally, but can vary by jurisdiction.

6. Market Definition

A key question to determining the market share is how that market is defined. It cannot be defined too narrowly or else just about every company would have SMMP in its sliver of a market. But if the definition is too wide, none would have more than a minor share of a huge market. What makes sense is to match the “significant” media market power with “significant segments” of the media market that make economic and intuitive sense. For example, the markets could be the major links in the chain of the online video market: content production; aggregation; content platforms; data operations; infrastructure platforms; ISPs; and consumer media devices.

7. Access Provision by Whom?

Which companies must offer access? Requiring every last tiny operator to do so is a regulatory overkill. And what purpose would it serve? The issues arise mostly for companies with market power. For a company, having a small market share means, by definition, that there are important alternatives for users, suppliers, or customers.²²

²² Many companies in the chain of online video are vertically integrated across multiple stages. In that case, the test would be for the element where they hold market power, and not for those stages where they do not.

What should such a market share test for market power be? It should be based on a clear standard that is based on empirical and analytical observations of the behavior of dominant firms and of tight oligopolies. In most industries, a firm with a market share of more than 30% would be considered to have significant market power, or SMP.²³ However, for the media sector, a special sensitivity to high market concentration and gatekeeping power applies, and it might result in a stricter standard. Such a threshold can be termed “significant *media* market power,” or SMMP. A company with a market share of over 25% would be considered to have SMMP. Even this is a fairly high threshold, considering that it means that two such companies could together control half of the market. A company with SMMP in a particular media segment would have to provide access in that segment, in an unbundled fashion rather than for its other stages, too.²⁴

A high market share alone is not sufficient to establish the possession of significant market power (dominance), but it is unlikely that a firm without a significant share of the relevant market would be in a dominant position. The market share threshold number would therefore be a rebuttable presumption for significant market power.

8. The Pricing of Access

One approach would be to establish regulated prices, in effect, public utility pricing based on some formula, such as that of rate of return on invested capital, avoided cost, or some other methodology. A second approach is that of straight cost engineering, including that of “forward-looking long-run incremental cost pricing.” One calculates the extra cost for the company to

²³ In the U.S., the Department of Justice’s merger Guidelines define a Herfindahl-Hirschman Index of 2,500 as a ‘highly concentrated industry.’ This measure would apply, for example, to a market with 4 firms, each holding 25% of the market; or to one firm with 40% and two with 21%. In Europe, market share is one factor of several, but the unofficial shorthand number is often given as 30%.

²⁴ In order to make the transition from non-SMMP to SMMP smooth, there could be a phasing-in of regulatory requirements corresponding to increasing market shares. The governmental regulatory body to make the determination whether SMMP exists would be the competition authority. In the United States, this would be the Antitrust Division of the U.S. Department of Justice. That agency could delegate its authority to a more specialized agency, the FCC, under guidelines. To identify market power requires data.

create and build the segment, and adds a reasonable profit margin on top.^{25 26}. A third approach is to require “*non-discrimination*” in pricing.²⁷

A version of non-discrimination is a “*most favored nation*” (MFN) model, which means that similarly positioned customers, intermediary information curators, or rivals must be treated similarly in terms of price and service conditions.²⁸ Access would not be free. It would be priced on the basis of ‘most-favored nations’ (MFN) concept, that is, by the principle that terms and options that are offered to one company must also be offered to others, with reasonable allowances for volume and other factors. Where industry participants are functioning in some cooperative fashion, MFN pricing is perhaps the easiest process is to establish. The approach originates in the world of trade negotiations, where countries agreed that a tariff rate set by a country on a product from a second country would have to apply to the same product exported by a third country.

Non-discrimination does not solve the problem of a provider of an element charging *all* rival users a monopoly price – as long as the same price is extracted from all. To deal with that one would have to add a test for “fair and reasonable” on top of the nondiscrimination test. In the IT world this process is known as “*Fair, Reasonable, and Non-Discriminatory*” (FRAND) pricing. It originated as a way to set the price charged by company A to its rival B for a patent license. FRAND pricing is most commonly seen in situations in which some users benefit from the technology developed by others, e.g., for a video codecs or for mobile telecommunications. It is established through an industry organization or industry standards committee that could include all major stakeholders, including users. They set up a process for determining FRAND

²⁵ “Costing Methodology for Next Generation Networks.” *Deloitte*, 2014, <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/technology-media-telecommunications/sea-tmt-costing-methodology-next-generation-networks.pdf>.

²⁶ Noam, Eli. *Interconnecting the Network of Networks*. Cambridge, MA: MIT Press, 2001

²⁷ Wu, Tim. “Network Neutrality, Broadband Discrimination.” *Journal of Telecommunications and High Technology Law*, Vol. 2, P. 141, 2003, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=388863.

²⁸ A related version is for the price to be the same as the one the dominant provider with SMMP charges to itself. This is conceptually a nice way to think, but practically the internal pricing of operations (transfer pricing) can be set at just about any rate. To determine its reasonableness would then require again some form of rate utility-style analysis.

conditions. Even more important, this sets up a self-regulatory mechanism to adjudicate complaints and have its decisions adhered to.²⁹³⁰

9. Accessibility

Access rights (or “accessibility”) can operate in several directions: *upstream* (towards the content creation); *downstream* (towards the user); and *sideways* (toward parallel elements; for example, an infrastructure network operator may want access to another infrastructure network operator in order to expand its geographical range; in an interactive game, users want access to other users.)³¹

A. Accessibility to Content Producers and Aggregators

Content products cannot be usually be accessed as a right. The speech rights of content producers mean that they can control whom they speak to. There are exceptions, however, in traditional TV media. In some countries, highly important sports events are accessible to all distribution networks that wish to do so.³² This reduces the ability of a rights holder to extract monopoly profits from pay-viewers or advertisers.

More significant is the system of “compulsory licenses.” For music, anyone has access rights to song compositions and lyrics created and copyrighted by others, and to perform them freely and sell recordings, without any special permission. A governmentally-set fee is due, however. That is an extraordinary right, non-existent in other media. Should there also be a compulsory license for online video content? That would mean that another platform could retransmit the content as long as it pays a regulated fee.³³ Under normal circumstances, the free

²⁹ Lewis, Jeffrey I.D.. “What Is “FRAND” All About? The Licensing Of Patents Essential To An Accepted Standard.” *Cardozo Law*, 11 June 2014, <https://cardozo.yu.edu/what-“frand”-all-about-licensing-patents-essential-accepted-standard>.

³⁰ Rypka, Ryan. “FRAND Royalties will Impact the Cost of Your Next Smart Phone.” *Michigan Technology Law Review*, 2018, <http://mtlr.org/2018/11/frand-royalties-will-impact-the-cost-of-your-next-smart-phone/>.

³¹ Game players’ connectivity to each other would be an “indirect” sideways access that passes through several other downstream stages.

³² Strictly speaking, the access is to the event, not to a video production by a rival.

³³ Or, should there be a narrowly targeted compulsory license that gives such rights only to certain platforms, in the same way that cable channels could be retransmitted in the U.S. but only by recognized MVPD platforms such as cable and satellite platforms? In 2015, the FCC expanded the definition of MVPD to a category of online channel package providers. The major U.S. television networks fought the online video platform providers on that status issue, because they did not want to be forced to give out a compulsory license under non-discriminatory conditions, which would have reduced their control and bargaining strength. In 2017, a federal Court of Appeals agreed, and

speech principles against compelled speech would protect the content owner or licensee from being forced to let others use and sell their programs, especially if they are competitors. But suppose, hypothetically, that Netflix has 50% of the SVOD market and insists that a Hollywood major studio had to license all of its output to Netflix alone and to no one else. Such exclusivity would be most likely held by American antitrust courts to be an exercise of monopoly power and to constitute a market foreclosure. And the remedy would be to require non-exclusive licenses. This is not quite the same as full accessibility by compulsory license. It would still require a license negotiated with the content provider, with the presumption that the terms of such license would be governed by FRAND principles relative to the terms given to the platform with SMMP.

There is even less of an access right *into* content. Control over a channel or a program is part of its editorial prerogative, and there are no rights to be included in, e.g., a news program or a game show.³⁴

A more nuanced access arrangement would be to require a subscription platform with SMMP to offer its content also in an unbundled form, i.e., ‘a la carte.’ A user would be able to access a piece of content by buying a ticket, without having to buy a subscription. The ticket price would be set by the platform. But it would be a ‘most-favored nation’ price, i.e., non-discriminatory. And while such a price might be set prohibitively high to discourage such use altogether, it would not make sense in commercial sense to prevent all one-time users altogether if they can be charged a fee that is net profitable to the platform. Publishers of popular magazines offer single-issue as well as subscription sales. Requiring such an unbundling would not be a restriction of a platform’s speech rights – it already distributes the content to everyone who wants to subscribe—but rather only on the manner it bundles.

held that an over-the-top video service does not classify as a “cable system” as defined in the U.S. Copyright Act, and thus did not get a compulsory license to retransmit the broadcasters’ content. There is, symmetrically, a question of access rights for others, such as “virtual MVPDs” operating online, to content that is offered by VOD platforms such as Netflix, Amazon, YouTube, and Hulu. MVPDs in the U.S. are, in particular, Sling TV, DirecTV Now, PlayStation Vue, Fubo, Philo, YouTube TV, PlutoTV, and Hulu Live.

³⁴ In the U.S., a “Fairness Doctrine” rule existed for several decades which required access to opposing perspectives on issues of public importance. However, this requirement was abolished in 1987. That rule existed as a condition for receiving a scarce and valuable license for a TV channel. It never applied to the print media. Although newspaper journalists often bemoan the abolishment of the Fairness Doctrine rule for TV, they would not tolerate it for their own publications, even on a voluntary basis. *In re Complaint of Syracuse Peach Council against Television Station WTVH Syracuse, New York*, 2 FCC Rcd 5043 (1987).

Such seller-required bundling (known as “tying”) has, in other cases, been cut down by courts or by laws, for example for Hollywood studios’ packaging of films offered to movie theaters. To find a tying requires market power in one or several of the tied items. In the case of a subscription platform with market power, this would be true by definition. Thus, there should be no fundamental impediment to mandate an a-la-carte option, and there are good antitrust grounds for a governmental or private challenge of a take-it-or-leave-it subscription bundle.

The implication of an a-la-carte option would be that a user’s delegated information intermediary could find a film through its search function across multiple platforms, and, if desired by the enduser, purchase it on behalf of that user, at the price set by the platform, without requiring a full subscription.

In conclusion: the protections of intellectual property rights and of speech rights are fairly firm in denying mandated access rights to content created by others, especially with the intent to re-distribute such content to third parties for profit. Where such rights exist, they are coupled with a mechanism of compulsory license payments. But where a platform holds significant media market power, it could not require exclusive licenses from content providers, and it might have to offer content also on an unbundled basis, at prices it sets.

B. Accessibility to Content Platforms

We now move to the accessibility to content platforms themselves. When it comes to content platforms such as Netflix, Amazon, Hulu, or Dailymotion, what should be the access rights of others? Normally, such a platform should not be required to carry content it finds commercially uninteresting, or objectionable in content terms, or created by rivals. However, if it holds significant media market power, its political and morality judgments and its business interests would create a significant society-wide gatekeeping role over content. That role would create an endless set of disputes. It would also create an opening for governments to mandate the company to become a private censor by imposing responsibility and liability. To some, therefore, content platforms with market power are like public utilities, with a requirement to serve every provider of content on equal terms. A mechanism of compulsory licensing could conceivably be used for the access by rival content onto a platform with SMMP. This would resemble a common carrier obligation that exists for several infrastructure industries such as telecom or airlines. But to others, the platforms are more like publishers who curate content and shape it into branded packages, and whose judgment is protected under free speech rules.

Fortunately, there is a middle road. First, platforms without SMMP need not carry content they do not wish to carry. That is pretty obvious. Second and more importantly, platforms with SMMP would also not be required to carry content they do not wish to carry, but they would have to make it possible for their users to conveniently reach such outside content. To do so, the dominant platforms must provide the information intermediaries with API access to their content catalog. This enables the information intermediaries to help endusers in their selection function, by giving information and access to content, on whatever platform it is stored.

C. Accessibility to Infrastructure Platforms

Accessibility to Content Distribution Networks. An infrastructure platform normally need not provide CDN service to an independent content provider. But where such SMMP exists for the CDN provider, then a content platform or another infrastructure provider should be able to interconnect to that CDN infrastructure at reasonable points, and to collocate their network and server equipment, in return for a payment, as discussed in the section on pricing.

Accessibility to Storage and Processing. Normally, there would be no requirement for an infrastructure platform to provide storage or processing service to independents or third-party rivals, or to collocate the independents' hardware servers in its data centers. But where the infrastructure platform holds SMMP, the same principles apply, to offer APIs to the independent, such as accessibility to its CDN or data centers at reasonable points, and at FRAND pricing.

D. Accessibility to Last-mile Transmission Service

The last-mile transmission segment – the communications link that connects the enduser to a core network further upstream—is provided by the Internet Service Providers (ISPs). ISPs use several types of links, mostly phone lines, cable lines, and mobile wireless. These links are either operated by ISP itself, or leased from a telecom infrastructure network company. “Access” can mean two things:

- *Access to an ISP* by any content, content provider, or platform. This is the basic issue addressed in the net-neutrality debate. The principle of non-discrimination would operate where SMMP exists, just as it would when it comes to other parts of the online video. And while this might restrict ISPs with such market power, it also gives them stronger bargaining power where they operate content platforms and CDNs, which many of them do. (In the U.S., content platforms are operated by AT&T, Comcast, and Verizon, which

are also the three largest ISPs.) The ISPs would not be restricted in network management functions, as long as these are applied to all similar types of data streams.

- *Access by an ISP to the last-mile infrastructure.* A “virtual” (facilities-less) ISP may seek to operate on top of the infrastructure. To picture this, imagine, in an analogy, a transportation company operating trains, but using the tracks of another company, which may be a rival for transportation customers. What kind of access would the train company have to those tracks? For ISPs, this kind of access is often implemented in Europe and Japan by regulations that require unbundled access by telecom operators and set a pricing system. This arrangement gives consumers additional options in choosing ISPs. But it also reduces incentives for additional infrastructure. Access rights by a virtual ISP to the local infrastructure of a communications network company would exist solely where there exists SMMP. Where no such market power exists, or where the SMMP exists on both sides, access would be negotiated on a commercial basis.

E. Accessibility to Data.

Data give competitive advantage in individualizing content, recommending content, and supporting effective advertising platforms. To be consistent in concept, where there is SMMP, consumer data should be accessible to competitors and independents.³⁵ However, the problem is the protection of privacy. Making that user data accessible to everybody willing to pay an access price will spread personal information widely. There is thus a clash between the goals of protecting user information and reducing media platform power. In that situation, privacy should take priority. In consequence, the data would not be accessible to rivals as a matter of right, but in fact should even be precluded to be passed on. It should be available to others, if at all, only in broad aggregates.

The protection of user data from wide access does not mean that market power should prevail in the exploitation of user data. There is another way to deal with the problem, based on the of the information curators described earlier. Users should be able to control subsequent use of personal information generated in a transaction with them. First, for all data operations above a certain size, they should be offered access to a menu of data-usage preferences. User permission is possible with full disclosure, and with an easy ability to stop such usage. Users

³⁵ In the UK, the Open Banking approach creates access rights by third parties to a consumer’s information, with the latter’s consent.

could be compensated by the company for various permissions, or they can offer the data to other companies, thus creating competition by data brokers. Where market power exists in an activity level where such data is generated, there would be further protections. In these transactions, the endusers would be represented by their information intermediaries.

V. Conclusion

This article proposes and develops an “Open Video System” to deal with digital dominance in the online video sector. Accessibility to a segment of an online video media company’s service or facility should exist where that company holds significant media market power. Where such market power is found, the company must provide access to such a segment through an API or similar arrangement, priced under the principle of a most-favored nation arrangement, and administered through industry self-regulation. Standing behind the self-regulatory mechanism is the governmental regulatory agency. Thus, it is a system of “regulated self-regulation.”

Access would be given to endusers and to information intermediaries who act in their behalf, and to rivals without SMMP. Access would not be to every element, only to those elements that have significant media market power.

The open video system does not require an opening by platforms without market power. Even where such market power exists, the system does not require a breakup of such platforms. And it does not require platforms to act as the policemen for governments to do things that governments have no legal right to do themselves.

There are no access rights, however, to a rival platform’s content. Nor is there is an access right by rival content to be placed on a content platform. Instead, there is an API access for intermediaries to the content catalog of platforms with SMMP, and they can provide links to rival online video providers. Similarly, there is no access right to personal data, but an intermediary may have control over data re-use when delegated by a user as its information intermediary.

Together, these approaches would assure a dynamic content industry and user involvement, while operating on infrastructure that operates with considerably openness to all

users and content providers. In doing so, the proposed open video system reduces the need to fall back on detailed governmental control and oversight.

Next-generation video medias must be open and diverse in technology, content, and participants. Openness, rivalry, competition, and choice will deal with market power, national culture, content diversity, and many issues. An access to segments where a platform holds digital dominance would create

- a more competitive and open system.
- structured to protect free speech intellectual property, and data privacy.
- Reduces gatekeeping power over content and over the providers of content.
- Strengthens technology innovation.
- Lower prices and increased consumer choice

But it will leave or exacerbate other issues. It is easier, for example, to control for user privacy when the number of participants in the data collection field is small. Therefore, for remaining or additional issues such as privacy, consumer protection, security, etc., there could be governmentally set floors and ceilings. And different countries could set them differently.

The proposed system does not solve all issues, and adds complexity, but it reduces the problem of digital dominance of the platforms and its global extensions, which otherwise would lead to still more complex regulations. We should give our attention and thought to establishing such a system, since it would be the foundation of media industry and of media policy for a long time. And the time to start working on it is here and now.