

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

**Summary of discussion of the roundtable on Vertical mergers in the technology,
media and telecom sector**

**Annex to the Summary Record of the 131st Meeting of the Competition Committee held in
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This document prepared by the OECD Secretariat is a detailed summary of the discussion of the roundtable on Vertical mergers in the technology, media and telecom sector held during the 131st meeting of the Competition Committee on 7 June 2019.

More documentation related to this discussion can be found at
<http://www.oecd.org/daf/competition/vertical-mergers-in-the-technology-media-and-telecom-sector.htm>

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Summary of the Roundtable on Vertical mergers in the technology, media and telecom sector

On 7 June 2019, the Competition Committee held a roundtable on vertical mergers in the technology, media and telecom (TMT) sector chaired by Professor Frédéric Jenny.

The Chair introduced the topic and noted the timeliness of the roundtable considering the years passed since the committee discussed vertical and media mergers, the fact some countries are considering revising their guidelines, and the growing number of high profile cases in the TMT sector. Compared with horizontal mergers, vertical mergers are more likely to result in efficiency gains derived from the elimination of double marginalisation (EDM) and improved vertical integration. Where concerns are raised, they are usually related to input or customer foreclosure, though some vertical mergers may facilitate collusion.

The Chair introduced the four expert speakers who took part in the discussion: **Margaret Slade**, Professor emeritus at the Vancouver School of Economics at the University of British Columbia, Canada;

Carl Shapiro, Professor at the Haas School of Business and the Department of Economics at the University of California at Berkeley, USA; **Christopher Yoo**, Professor of Law, Communication, and Computer and Information Science at the University of Pennsylvania Law School, USA; and **Luisa Affuso**, Chief Economist at the UK communications regulator Ofcom, UK.

The discussion covered three main topics: possible efficiency benefits of vertical integration; theories of harm, evidentiary requirements and the success of cases; and the design and effectiveness of remedies.

The Chair then asked Margaret Slade to give her general presentation of the issue.

Margaret Slade noted that while most vertical mergers result in efficiency gains, some require scrutiny. Differentiating between beneficial and harmful vertical mergers is challenging, as, in contrast with horizontal mergers, vertical cases require analysis of not one but two markets and the interface between them. Measuring the efficiency benefits of vertical mergers, which could result from the transfer of intangibles or mitigation of contracting costs, is generally more challenging than assessing the benefits of horizontal mergers, where production and distribution efficiencies are predominate.

EDM is over emphasised both in theory and in practice. Atalay, Hortascu and Syverson (2013) found half of upstream manufacturers fail to send shipments to integrated downstream divisions; clearly, in the absence of internal transfers, margins are not eliminated, and foreclosure is unlikely. Alternative explanations for the occurrence of vertical mergers should therefore be considered, and prominent economists, including Nobel laureates, have proposed various explanations, e.g. the mitigation of contracting, renegotiation and holdups costs, facilitation of specific investments, providing of incentives, efficient risk allocation etc. Note, however, that some models are only applicable in the context of perfect competition or monopoly.

OECD economies are in a process of orienting towards knowledge-based intangible products, which are characterised by network effects and two-sided markets. 60% of challenges to vertical mergers in the United States in the last 25 years concerned the TMT

sector. Trends in enforcement vigour over the years may be explained by different approaches adopted by administrations under different presidents.

Regarding efficiencies, the common approach in the literature of comparing vertical integration with separation is not always applicable to vertical mergers. For example, an integrated firm might co-locate facilities and obtain efficiencies, but merging two existing facilities does not allow the merged firm to obtain those same efficiencies from co-location (not without moving the existing facilities).

EDM's importance is also overstated. EDM is not a true efficiency that lowers input or output or increases productivity, but merely a pricing externality; moreover, Salinger (1991) and Luco and Marshal (2018) show prices may actually increase as a result of EDM. Many studies fail to test EDM's direct effect on prices and fail to account for alternative efficiencies which, while harder to test, could lead to lower prices.

Some indirect evidence of alternative efficiencies is presented in Acemoglu et al. (2010), who demonstrated that upstream technology intensity lowers the probability of vertical integration, whereas downstream intensity raises it; these findings, supported by other indirect evidence, imply that it is more efficient for producers of complex products than it is for producers of simple products to maintain control over production. Many studies indicate other positive effects vertical integration has on costs, prices, investments and quality in various industries.

As for competitive harm, while many studies show evidence consistent with foreclosure, they fail to directly test for it. Note that foreclosure resulting from lower costs or EDM and the merged entity favouring its own products is not necessarily a negative effect. Furthermore, while a merger may lead to foreclosure of one product, it may eliminate foreclosure of another as has shown by Suzuki's (2009) study of the Turner-Time Warner merger. While many studies of the cable TV sector found evidence of both foreclosure and efficiencies, with net effects on consumers tending to be positive, Crawford et. al (2018) find considerable heterogeneity in welfare outcomes. Recent studies focused on market structure point to anticompetitive effects of vertical integration in various settings (Nishiwaki (2016), Lee (2013); Norman (2017). McGowan (2017) showed increased competition in coal markets leads to less vertical integration.

Competition authorities do not have the luxury of reviewing mergers *ex-post* and should be careful about applying techniques such as upward pricing pressure and merger simulation in the context of vertical mergers.

The Chair gave the floor to the Secretariat.

The Secretariat noted the relative abundance of literature on competition concerns resulting from vertical mergers is explained by interest in exceptions to the rule that vertical mergers are usually procompetitive. Interestingly, much of this literature shows some evidence of foreclosure, but does not necessarily show harm to consumers. These results are consistent with enforcement trends: relatively few vertical mergers are subject to enforcement, since their direct effects, in terms of internalisation of vertical externalities and increased economies of scope, are positive; only indirect effects are likely to raise competitive concerns.

Most theories of harm revolve around foreclosure and the facilitation of horizontal collusion, while other theories, such as price discrimination, are usually rejected. Most competition authorities implement the ability-incentive-effects framework, with "ability" being the control over an important and unique output; "incentive" requiring analysis of

diversion ratios and price margins; and “effects” involving the balancing of harm against efficiency effects. Most cases that require intervention are resolved through remedies, and while competition authorities usually prefer structural remedies, they are more open to implement behavioural remedies to tackle behavioural issues that may occur in vertical cases.

Regarding the TMT sector, concerns about anticompetitive behaviour seem to result from firms’ control of “big data”, intellectual property rights and platforms, and their incentives to distort competition in an attempt to block entry or avoid regulation, or to counter strong bargaining power of other market players along the supply chain. On the other hand, these markets are characterised by economies of scope, high levels of investment and innovation etc. It is therefore important to focus on the net effects on consumers.

The Chair moved the discussion to the subject of efficiencies and noted that from the country contributions it is apparent that competition authorities find it challenging to assess them. He asked Chile to discuss its experience with the AT&T-Time Warner merger.

Chile noted that the AT&T-Time Warner filing coincided with the implementation of the mandatory merger control system, forcing the National Economic Prosecutor (FNE) to face a complex merger just as the new regime was inaugurated. FNE implemented the traditional ability-incentive-effects analytical framework and was cautious to account for the strong dynamism and high level of transformation in the sector. Following the European Commission’s (EC) approach, FNE recognizes efficiencies that are merger-specific, verifiable and counterbalance increased market power. For example, EDM would not be considered merger-specific where there is evidence pre-merger EDM was achieved by employing alternative contractual mechanisms. To be recognized, efficiencies must also be sufficient, timely, and likely to be passed on to consumers. The burden of proof lies with the merging parties.

Analysis of efficiencies did not play a major role in the AT&T-Time Warner case. A gross upward pricing pressure index analysis raised concerns the merging parties would have strong incentives to foreclose DirecTV’s (AT&T) competitors by limiting their access to content produced by Time Warner. However, rather than bear the burden of proving efficiencies, the parties opted to propose remedies, the main one being the implementation of a “baseball style” arbitration mechanism to resolve disputes between AT&T and TV cable operators. The decision to clear the merger is not subject to judicial review. It remains to be seen whether the judiciary will back FNE’s assessment of efficiencies.

The Chair asked New Zealand to clarify the difference in its regime between voluntary notification and authorisation of mergers, and to discuss its rejections of efficiencies argued in the Sky-Vodafone merger.

New Zealand explained that merger notification is voluntary. However, the Commerce Commission retains powers to investigate any merger and seek penalties where parties to an anticompetitive merger fail to apply for clearance. Parties to mergers that risk leading to a significant lessening of competition (SLC) may apply for authorisation either at the outset or after having notified of the merger. In these cases, the Commission accounts for both the quantity and quality of benefits and detriments resulting from the merger and determines whether the merger (or agreement) meets a total welfare standard and is ultimately in the public benefit. Authorisation applications are rare, with only one related to vertical integration in the last ten years.

Efficiency arguments may be presented to counterbalance findings a merger may result in SLC, without resorting to an authorisation application, but the threshold is high. Such

arguments were rejected in the Vodafone-Sky merger, the former being a major telecommunication provider, and the latter being the leading pay-tv operator that held the rights to premium sports content, including to all local rugby games. The parties submitted the merger would generate efficiencies that would facilitate the supply of innovative products, but they failed to support their claims with strong evidence of the specifics of the new products they would provide post-merger. In response to the Chair's request for clarification, New Zealand explained that the Commission searched the parties' internal documents for evidence related to the product bundles that the merged entity would offer, because such evidence could provide a degree of certainty about post-merger developments in the market and inform its quantitative assessment.

The Chair asked Portugal to discuss its decision to block the Sport TV merger in 2013 and the Altice-Media Capital merger in 2017, and in particular the balancing of efficiencies with competitive harm in those cases.

Portugal noted that the burden to demonstrate efficiencies are verifiable, quantifiable and merger-specific, lies with the parties. None of the parties to the cases mentioned put forth efficiency arguments, leaving the Portugal Competition Authority (AdC) to focus on competitive effects and remedies.

The proposed Altice-Media Capital merger would have integrated a major pay-tv platform with the main local media content producer. The AdC was primarily concerned about the foreclosure of MEO's (Altice) rivals' access to Media Capital's channels - a position supported by results of a survey of consumers' reaction to the extraction of Media Capital's channels from rivals' programming, and calculations showing the merging parties would benefit from foreclosing access to those channels. Another concern related to the strengthening of the merging parties' bargaining power, which could result in higher carriage fees, a lessening of competition in downstream markets and harm to consumers. The parties withdrew the merger.

The proposed purchase of 25% of SportTV by Portugal Telecom Group (PT) raised concerns the merger would facilitate co-ordination between PT and ZON Optimus, PT's main rival in the telecom and pay-tv sectors, whose share of SportTV would have been lowered from 50% to 25% post-merger. The AdC was also concerned about input and customer foreclosure and about the interlink between the vertical and co-ordinated effects, as the ability to foreclose could further block competition and stabilise collusion. The proposed behavioural remedies were rejected as they were poorly specified, deemed insufficient to protect SportTV's only rival's access to downstream markets, would have standardized offerings to consumers and would not have resolved concerns of co-ordinated effects.

The Chair noted that Sweden's follow-up study of the TeliaSonera-Zitius merger showed the merger had resulted in partial foreclosure as well as in better quality and lower prices, and asked Sweden whether both negative and positive effects were underestimated at the time the merger was under review.

Sweden noted it was mainly concerned with the merger's horizontal effects but also considered the possibility TeliaSonera would be able to foreclose internet service providers and broadband TV distributors. *Ex ante* it appeared such foreclosure would not have been profitable, but the *ex post* study of the merger pointed to some evidence which may be consistent with foreclosure, namely that service providers which are vertically integrated with network providers tend to have a larger share of that network. This may, however, be a result of other factors, such as consolidation in the telecom market.

The Chair noted Sweden stressed that EDM is the main efficiency gain, which is relevant in vertical merger assessment, and asked it to clarify whether this signifies EDM's importance or the ease of its calculation.

Sweden explained its role in assessing efficiencies is somewhat passive and that it relies on the parties to raise efficiency arguments and provide concrete substantiating evidence. EDM is relatively easy to verify and quantify and is often a direct consequence of vertical mergers. Other efficiencies may be equally important, but one must adopt a conservative approach when assessing them.

The Chair asked Japan to explain how the vertical and two-sided platform aspects were combined in its review of the Kadokawa-Dwango case. Japan explained that the Japan Fair Trade Commission (JFTC) conducted an economic analysis on two-sided market in a case where paid video publishing service operator and paid video distribution service operator planned to merge by establishing a new holding company through joint share transferring. The JFTC took into account indirect network effect and found that there was no incentive for the paid video distribution service operator to implement the input foreclosure because the more the number of platforms to upload contents increases, the more opportunities to be viewed videos have, translating into more profits.

The Chair mentioned, to summarise the first part of the discussion, that Slade and Carl Shapiro's views may be reconciled since, where management literature suggests it is profit maximising to charge the full transfer price, foreclosure is unlikely. He also noted that there is a shared view that there are efficiencies, other than EDM, that are being overlooked, and that further research is required to gain a better understanding of these efficiencies.

The Chair moved the discussion to theories of harm, the tools competition authorities use to develop them and the burden of proof, and asked Carl Shapiro to share his views.

Carl Shapiro noted that most vertical mergers do not present a competition problem and that generally, vertical mergers are less troublesome than horizontal mergers. It is therefore important to be able to identify the small number of mergers that merit scrutiny. His presentation, which focuses on input foreclosure, is informed by his experience as an expert witness on behalf of the United States Department of Justice (DoJ) in its unsuccessful challenge to the AT&T-Time Warner merger.

The relevant elements to the analysis of input foreclosure include the merging entity, comprised of an upstream input division and a downstream product division, as well as other parties such as the downstream rivals who are the possible victims of foreclosure, and the final consumers. Other relevant elements are the possibility of EDM and raising rivals' costs (RRC), both of which must be proven, and the diversion ratio between the downstream rivals and the merging downstream product division. Typically, vertical merger efficiencies strengthen the downstream division, while some type of foreclosure weakens downstream competitors, and the question is how this trade-off impacts consumers.

In the AT&T-Time Warner case the DoJ was mainly concerned about the partial foreclosure of DirecTV's (AT&T) rivals through the raising of costs borne by said rivals for including Turner (Time Warner) content in their multi-channel video packages. The analysis follows the standard ability-incentive-effects framework. Analysis of ability focuses on the importance of the input – is it widely used by rivals? Can it be easily replaced? How refused access affect rivals? The analysis of incentives focuses on the diversion to the downstream division caused by the weakening of rivals, and on the margins of the downstream division. In the AT&T-Time Warner case it was clear that rivals were

using Turner content, but there was disagreement about its importance considering the existence the abundance of other content. The parties were able to use consumers' shift towards streaming services to their advantage, despite this being irrelevant to analysis of diversion resulting from foreclosure. The court rejected the DoJ's argument that DirecTV's margins are large considering the size of the packages it sells, as it was difficult to obtain quality data from AT&T. Regarding anticompetitive effects, based on the aforementioned elements and on bargaining theory, the DoJ estimated the price increase to rivals and ultimately consumers as a result of partial foreclosure.

Efficiencies are considered once the ability-incentive-effects framework raises concerns. EDM may be recognised as well as other efficiencies, though the standard of proving the latter are rather stringent and it is quite difficult to balance them against consumer harm.

If EDM is recognised and sizable, it should be compared to the rise of rivals' costs. Consumers are likely to benefit where costs are lower overall, so EDM may offset concerns of RRC. EDM should be presumed to result from the merger, but it is not necessarily merger specific. Also, if the input is widely used by all downstream firms then EDM is probably quite small. Arguably, this was the case in the AT&T-Time Warner merger, where an increase in DirecTV subscription would not have significantly increased subscription to Turner content, since most consumers would have already been subscribed to rival packages that included Turner content. As a result, a modest EDM was estimated, but the court rejected this analysis.

The proposed framework is valuable for assessing whether mergers raise concerns of unilateral effects that merit additional review but does not address co-ordinated effects. Note the analysis here and in the AT&T-Time Warner case did not rely on market definition or market shares, and that it differs from the European Commission's view in this respect. Rather, the analysis focused on the effect of withholding Turner content from DirecTV's rivals. Another reason not to focus on market definition and market share is that in these cases downstream market shares do not directly relate to harm.

The Chair asked Carl Shapiro if he believed Turner's content was complimentary to other programming – a finding which would have complicated the issue.

Carl Shapiro agreed. He stressed that dealing with market definition and shares in this context is a distraction.

The Chair then gave the floor to Christopher Yoo.

Christopher Yoo said the case for blocking vertical mergers is rather weak, but it nevertheless exists. Theories developed through the ability-incentive-effects framework should be tied with empirical evidence. Remedies may be considered as the fourth element of this framework, though there is a growing understanding that remedies may be imperfect, and that some issues cannot be adequately addressed.

The ability-incentive-effects framework should be applied independently to each theory of harm and agencies should not argue in one theory of harm that products are complements, while in another that they are substitutes.

Regarding ability to foreclose, the structure-conduct-performance paradigm is less relevant where there exists actual evidence of market performance, as was the case in the AT&T-Time Warner case. Structural preconditions may however be useful as screens for enforcement purposes, since ability depends on concentration in the primary and adjacent markets, and on entry barriers in the adjacent markets. Most models in the literature assume these preconditions. Ability also depends on demand and supply substitutions. For

example, the inputs to produce video are widely available, and there has been tremendous growth in production of short and long form video, with the exception of sports content.

While the single monopoly profit theorem is stylised, so is the post Chicago literature. For example, the results of Whinston's tying model change dramatically by allowing for a duopoly; and as you allow for more players it becomes apparent results depend on the relationship between the minimum efficient scale and the size of the outside market, which cannot be generalised.

Regarding RRC, the FTC published a note in 1990 which showed that as prices rise, the cost of raising rivals' costs becomes much more expensive, creates incentives to hold out or defect, and that one must also consider strategies to counter RRC.

Many models fail to assess case-specific efficiencies. For example, quality externalities such as those created by general purpose technologies for complementary services, are not internalised unless greater vertical integration is allowed.

As Carl Shapiro acknowledged, saying that particular content is a "must-have" is not enough and one must understand the diversion ratios. This stresses the importance of empirical studies.

Patent literature is inconclusive in relation to the relationship between firm size and innovation. The problem is exacerbated in copyright and creative industries. Restricting profitability in these industries may raise entry barriers.

As for remedies, behavioural remedies may be more important in vertical cases, but they raise enormous administrability problems. The seminal Terminal Railroad case which dealt with access remedies went to the Supreme Court three times because of changes that occurred over time and because forcing unwilling parties to do business together leads to clashes.

The Chair then asked the United States to discuss lessons learned from the AT&T-Time Warner case, in particular those pertaining to the tools used to follow the methodology, and the determinants of the intensity of enforcement in the area of vertical mergers.

The United States Department of Justice believes it had the necessary tools but failed to meet the challenge of using complicated models to convince a generalist judge. Also, naturally, the court focused on some weaknesses in the evidence.

Changes in enforcement intensity may be explained by the evolution of theories of harm such as foreclosure and later RRC and their effects, and the increased sophistication of analysis and availability of data. The identity of the US president is irrelevant.

Regarding EDM, the question is not whether it is an efficiency. Rather, one should consider EDM as a potential effect of vertical integration, which should be considered together with other effects of the merger.

Carl Shapiro believes the theory and evidence in the AT&T-Time Warner case were tightly held. The case was weakened by a witness testimony record which was not as strong. For example, some testimony was clearly affected by witnesses' own business interests, and the judge found it hard to believe the merging parties' competitors. There may have been over reliance on expert testimony on the part of the DoJ.

Christopher Yoo clarified he was not criticizing the handling of the AT&T-Time Warner case. Merger enforcement is largely determined by reported cases, and there is a study

showing a general downward trend in non-merger civil cases in the US, which might suggest it follows developments in theory, not with changes in the administration.

The Chair asked Mexico to discuss its reliance on quantitative and qualitative evidence in vertical merger cases.

Mexico's first step in analysing the AT&T-Time Warner merger was to assess the current structure of the affected markets. Concerns of input and customer foreclosure were raised in light of Time Warner's presence in the content market and AT&T's activity in the TV distribution market through its holding of Sky, whose majority shareholder is the Televisa group – a major pay-tv services and audio-visual content provider. Based on vertical arithmetic, econometric models and analysis of different scenarios to assess the benefits and harms and to predict anticompetitive effects, the Federal Telecommunications Institute (IFT) concluded that the merged entity would have significant incentives to engage in input and customer foreclosure.

The Chair noted he believed Belgium's contribution casts doubt on the ability to rely on quantitative assessment, as those are based on many assumptions that are difficult to justify. He asked Belgium if his interpretation of its contribution is correct.

Belgium agreed with the Chair's interpretation but noted its approach is not different, but that the limits of quantitative assessment should be acknowledged. Considering the availability and abundance of data, quantitative assessment is useful for market definition. But it is not always easy to find data on diversion ratios. Experts tend to choose studies of markets that are *prima-facie* rather different, and their studies should therefore be treated prudently.

Margaret Slade asked Carl Shapiro whether he advocated looking at foreclosure and RRC independently from EDM. She noted that Salop and Moresi's "u" (upstream) vertical measure of upward pricing demonstrates the upstream integrated firm's incentive to raise the unintegrated downstream rival's price; that measure must be positive since it is evaluated pre-merger, so it cannot account for EDM. But Domenenko and Sibley evaluate this measure and find that in 60% of cases the sign is wrong. While their data is problematic, it appears that measure is rather poor because it does not allow the cost of the firm to fall.

Carl Shapiro replied that in horizontal mergers there is always a certain degree of upward pricing pressure, but the question is whether it is significant. By analogy, in the case of vertical mergers incentives and ability will be limited if the input is not very important, the diversion is small, or the margins are small. One must first look at the anticompetitive effects. If the risk seems significant, efficiencies should be considered. EDM should be considered first, and the rest later.

The Chair noted Luisa Affuso is chief economist of a regulator overseeing the TMT sector, and asked her to share her thoughts about the specificities of the sector and the goals of merger control in this context.

Luisa Affuso noted that Ofcom is the sector regulator but also has concurrent antitrust powers in the sector. She noted the TMT sector is characterised by rapid technological change. These changes lead to an increase in vertical integration and pose a major challenge for merger control. For example, BT's (the UK's largest fixed communication provider, which also provides TV content) merger with EE (the largest mobile provider) exemplifies trends of convergence and movement across different vertical stages. The same trends exist in the media space, with increased vertical integration across the content creation, aggregation and distribution chain. Under these circumstances, it is difficult for decisions

to stand the test of time. For example, the Comcast-Sky merger was cleared, but the parties are still subject to regulations such as the “prominence regime”, designed to ensure all channels are granted sufficient prominence and to dispel customer foreclosure. The question is whether this regulation, applicable to linear television, is relevant in an increasingly non-linear world, where the content provided is often curated specifically to the consumer, and foreclosure is more likely.

The evolution of new business models, in particular, “ecosystems”, that defy traditional models, also poses challenges for merger control. The harms observed in this context are different from those one looks for in traditional merger control. For example, concerns related to concentration of ownership of media, media plurality, and the reduction of diversity of news and information, were analysed in Ofcom’s review of the proposed Fox-Sky merger. Many of these concerns, which were traditionally horizontal, are becoming increasingly vertical with the advent of online provision of information.

The issues of misinformation on social media and data privacy are beyond the traditional competition analysis framework which focuses on price and quantity, but they do test the adequacy of current approaches. Some of these issues could be incorporated into traditional analysis. For example, data seems to be the price paid for services, and misinformation could be a dimension of quality. Sector regulators may assist competition authorities by providing important information on market dynamics, or by alleviating certain competition concerns and introducing other types of harm that are traditionally not considered.

The BT-EE merger was ultimately cleared after ten theories of harm were considered, the main one concerning mobile backhaul access. The Competition and Markets Authority (CMA) tested Ofcom’s regulation and cleared the merger after it was satisfied it addressed the CMA’s concerns. This demonstrates that regulation and antitrust analysis should go hand-in hand, especially since the sector regulators are in a position to administer creative remedies.

She noted that in the Comcast-NBCU case, the US Federal Communications Commission considered possible remedies before assessing efficiencies, and suggested judges could be more open to that seemingly simpler approach, as opposed to the more complex process of weighing harms against efficiencies.

Mergers in the tech sector are currently the subject of heated debate because some involve both horizontal and vertical elements while others could be considered “killer acquisitions”, designed to remove potential competition. The Furman report suggests addressing the challenges in this sector by adopting a balance of harm test, where a low probability of very significant harm would suffice to block a merger; an EU expert panel suggests shifting the burden of proof to firms who control bottlenecks or hold a dominant position, and the Stigler Center has also considered a similar approach. The challenges in this context and the risks of over and under-intervention are significant. Sector regulators are better positioned than competition authorities to address some of these challenges and can do so *ex ante*.

The Chair asked whether Luisa Affuso believed sector regulators are better positioned because they can address both competition and other issues.

Luisa Affuso replied she believe competition authorities and sector regulators complement one another. For example, the CMA recently published a report concerning its assessment of tech mergers which noted the CMA would have benefited from a better understanding of market dynamics and of the technology. Co-operation with a sector regulator could be

beneficial in this regard, though admittedly, sector regulators do not have a full grasp of the challenges in these markets.

The Chair gave the floor to BIAC.

BIAC believes public interest considerations should be applied by the appropriate mandated regulator, rather than the competition authority, unless it is duly mandated to do so. For example, questions related to media plurality or foreign ownership are usually beyond competition authorities' statutory mandate. Competition authorities' focus on traditional theories of harm maintains confidence in the merger review process. However, where there exists overlapping jurisdiction to review a merger, competition authorities should co-operate with the relevant regulators in order to avoid duplication, excessive costs and proceedings, inefficient processes, and to the extent appropriate, to avoid divergent outcomes.

The Chair noted that adopting a more dynamic approach as suggested by Luisa Affuso trades off accuracy for relevance, and asked BIAC if it believes competition authorities should do so.

BIAC believes competition authorities are already well positioned to evaluate dynamic changes in markets, including assessment of efficiencies and appropriate remedies. There should be a balance between the requirement of application of statutory mandates with legal certainty, and the incorporation of the relevant facts and dynamism of a market.

The Chair asked the European Union to respond to Carl Shapiro's comment related to the relative insignificance of market definition, and to discuss the main challenges it faced in the context of vertical mergers in the TMT sector.

The European Union noted one of the challenges it faced while reviewing vertical mergers in the media sector was taking Over-the-Top (OTT) players into account both in the product market definition and in the competitive assessment. In the past, TV channels were distinguished according to genre, rather than according to the distribution platform. While the line must be drawn somewhere, market definitions were left relatively open in order to account for developments in the markets and perhaps address issues such as those raised by Carl Shapiro. The EC assumed the burden of conducting its assessment in all the plausible markets.

As for the competitive assessment, it appears OTT players exert competitive pressure on traditional TV players, and that the latter have also started to develop their own OTT services. The EC is currently assessing these aspects in two ongoing cases, mostly by analysing internal documents.

The Chair noted that since 2015, Brazil reviewed 95 vertical mergers, resolved 11 of them with remedies and blocked one. He asked Brazil to discuss the challenges of rapid market changes, and of assessing non-price and efficiency effects.

Brazil noted that the speed of market changes in the telecom sector is a major challenge, especially since rapid changes complicate market definition. For example, it is difficult to judge whether streaming services are a good substitute for pay-tv services. The Administrative Council for Economic Defense (CADE) does not consider these services as substitutes, but it must constantly review its position because of the rapid changes. Another major challenge relates to the assessment of non-price effects, namely the diversity and quality of content available to final consumers, which are very difficult to assess. Generally, CADE assesses competition issues while the sector regulator addresses regulatory issues.

For example, the AT&T-Time Warner case was cleared by CADE but ANATEL, the telecom regulator, is still considering its decision.

The Chair asked Korea whether it would have blocked the SK Telecom-Hello Vision CJ merger absent horizontal concerns, and whether it tested for the vertical restriction's effects, or limited its analysis to an incentive test.

Korea briefly described its framework for analysing vertical mergers and noted that while it considers whether efficiencies could mitigate competitive harm, it has never approved a vertical merger on the grounds of efficiency benefits. In addition to horizontal overlaps, the SK Telecom and Hello Vision CJ had vertical relationships. In particular, SK Telecom was the second largest wholesale telecommunications provider, while Hello Vision CJ – a mobile virtual network operator (MVNO) was the largest buyer in that market. The Korea Fair Trade Commission tested for competitive effects and concluded the merger would risk foreclosing competitors in the wholesale telecommunications market. In fact, after the merger transaction was signed, the number of Hello Vision CJ's subscribers who used SK Telecom's network increased rapidly while the number of those using competing networks decreased. The Committee rejected the merger on the grounds of both horizontal and vertical concerns.

The Chair moved the discussion to the issue of remedies, and asked Germany to explain why it opted to block the CTS Eventim-Four Artists merger, rather than prescribe remedies.

Germany noted that pre-merger, CTS Eventim held a dominant position in the market for ticket system services, i.e. systems which allow event organisers to sell tickets via different advance booking offices, and for the latter to book tickets for different events. This market is characterised by strong, indirect mutual network effects and very little multihoming. CTS Eventim sought to acquire Four Artists - a relatively large event promoter which offered very attractive content. The concern was this acquisition would further amplify the indirect network effects and strengthen CTS Eventim's dominant position. Not only was the merger blocked but the exclusivity agreements between CTS Eventim and event organizers and advance booking offices were also prohibited. This decision demonstrates the relevance of the concept of customer foreclosure in the context of multi-sided platforms. The decision was upheld by the higher regional court in Düsseldorf but may still be the subject of appeal to the Supreme Court.

In that case, the parties were not prepared to offer remedies that would have addressed the competitive concern. Generally, remedies should be tailored to the specific competitive concerns they are designed to address. Divestiture is preferred, but behavioural remedies can be accepted, provided they do not require ongoing monitoring. Market access, IP licensing, or disclosure of information on software or hardware interfaces could be acceptable remedies to address concerns related to increased barriers to entry. However, "Chinese walls" remedies would be rejected as they fail to address the post-merger market structure.

The Chair noted that Spain's approach towards behavioural remedies is relatively relaxed. Spain imposed extensive behavioural remedies in the Telefónica-DTS case and relies on competitors to report violations. He asked Spain whether this reliance on competitors solves enforcement problems or whether there is a concern of false complaints.

Spain acknowledged monitoring is one of the main challenges associated with non-divestiture remedies. The National Commission of Markets and Competition (CNMC) usually imposes an obligation to file periodical reports as a means of ensuring compliance, but input from competitors is also considered an important tool. Importantly, the remedies

in the Telefónica-DTS case were designed in close co-operation with the sector regulator. However, the cost of monitoring these remedies has been significant. The CNMC may nevertheless opt to extend the five-year commitment period for an additional three years.

In response to the Chair's question regarding the time dimension of remedies, Spain explained the main challenge is to allow enough time for competitors and clients to look for alternative suppliers without prolonging the monitoring period excessively. The EU guidelines suggest a maximum period of five years but there have been EU level cases with remedies lasting for longer periods of time.

Although violations reports by competitors can be useful to monitor the effective implementations of remedies, the CNMC also routinely carries out other investigative measures such as sending information requests to market participants.

The Chair noted that in the Bell Aliant-Ontera merger, Bell Aliant undertook to allow its competitor to access four of Ontera's fibre optic telecom strains for a period of 20 years, and asked Canada how it negotiated a remedy for such a long period of time, considering the dynamic nature of the market.

Canada explained that this remedy was not actually negotiated but rather proposed by the parties. However, in most cases remedies are negotiated. Behavioural remedies are frequently implemented in the context of vertical mergers, including firewalls between business units designed to address concerns about information sharing and the possibility of increased co-ordination. Canada acknowledged implementing behavioural remedies poses significant challenges, as it is difficult to anticipate issues and as enforcement costs are generally significant. Behavioural remedies are most effective when the Competition Bureau has full information about the way the merged entity will operate. In the Glentel-Rogers-Bell case, the Bureau negotiated a ten-year consent agreement that included firewalls to prevent Bell and Rogers from sharing sensitive information. In contrast, firewalls between divisions of the same business seem to have been less effective and more difficult to monitor. The timeframe depends on the specific theory of harm, the features of the market and the possible timelines for entry by competitors.

The Chair asked Latvia to explain why it opted to impose remedies in the Bite LT-Media Holding MTG case, considering the significant efficiencies resulting from the merger such as future possibilities to combine and bundle different mobile, TV and other content related services.

Latvia explained the existence of considerable efficiencies led to the imposition of behavioural, rather than structural, remedies. Another reason behavioural remedies were chosen was the concern that divestiture of one of the only two "must-carry" channels owned by Media Holding MTG would likely have resulted in the loss of that channel (considering the crisis in the advertising market, and the necessity to invest in the channel and potential purchasers' inability to do so).

The Chair asked the experts if they had any comments about the discussion.

Christopher Yoo noted he agrees with Margaret Slade and Luisa Affuso's comments about the role of regulation and stressed the importance of preventing forum shopping and contradictory decisions. He noted it was interesting they both regarded competition and regulation as complementary, whereas in the literature they are regarded as substitutes. However, in margin squeeze cases, competition enforcement could complement price regulation; also, some of the literature regards the presence of a sector regulator as a precondition for administering complex competition remedies.

The Chair noted that it is more important to focus on the results of the merger than to label them as efficiencies. As for theories of harm, it is clear the standard of proof depends on the legal regime, or in other words, whether a judge or an administrative body makes the decision. In addition, competition authorities may be overlooking many important issues that mergers in the TMT sector raise and may fail to account for the dynamics of the market; co-operation with sector regulators may be beneficial in this respect. As for remedies, behavioural remedies designed to tackle foreclosure may be easier to monitor because interested parties are likely to report violations, but it is also clear that design of those remedies is challenging because of the dynamic and complicated nature of this sector. Indeed, some remedies have failed. The Chair thanked the experts and members for their contributions and concluded the discussion.