Challenges for present and future competition law enforcement: Digital economy

Frederic Jenny

Chair, OECD Competition committee

Professor of economics, ESSEC Business School, Paris

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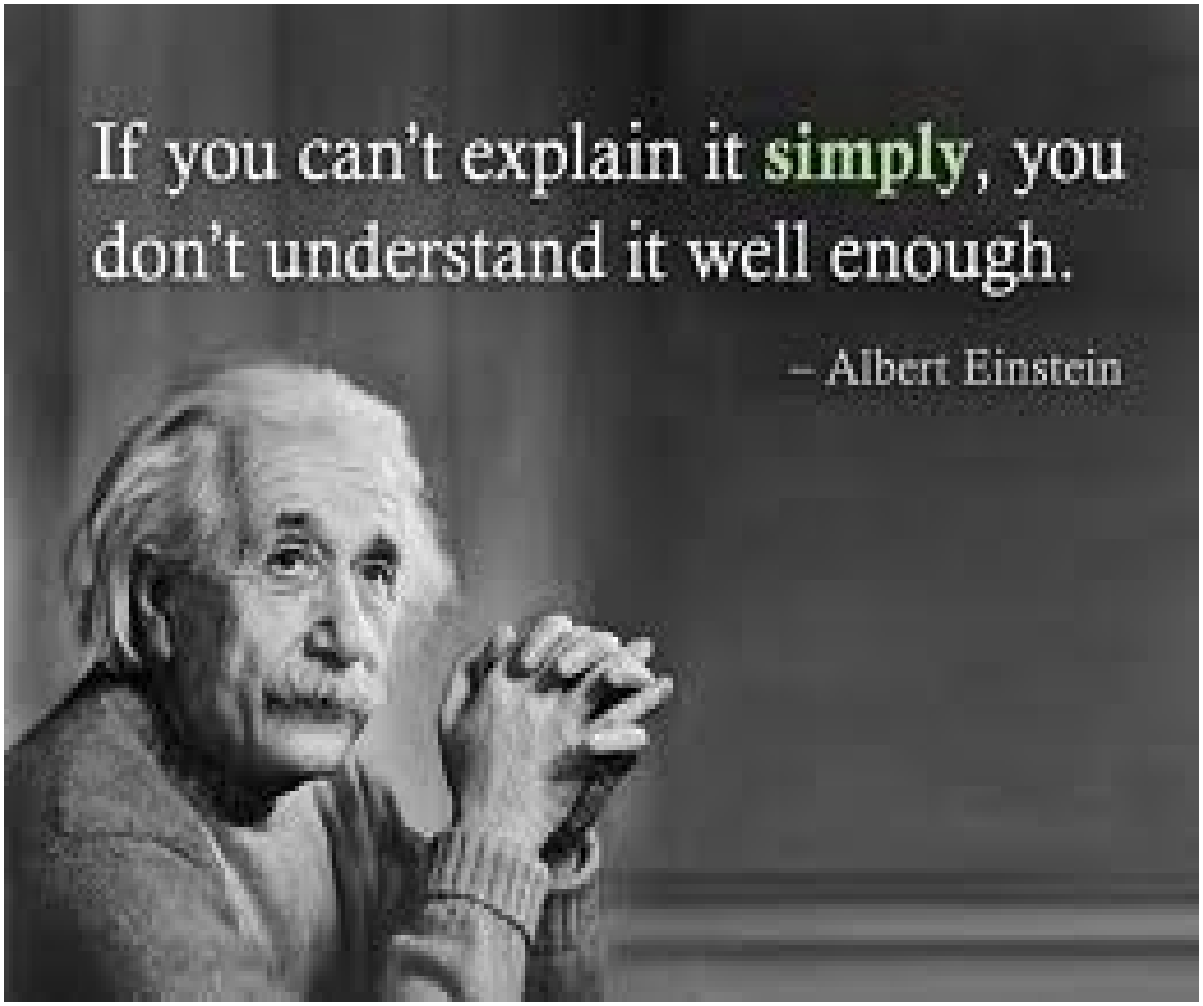
1) Competition law and innovation

Innovation and competition



Need for a multidimensional approach to competition law enforcement

I would note that **historically—and in many cases today—the focus of antitrust concerns is on the likely price effect of a proposed merger**. This focus on price makes the most sense when dealing with commodity products such as oil, steel or aluminum, and this is where early antitrust enforcers focused their efforts.

But today's economy looks very different. Many of the markets we encounter today are not simple, commodity markets. Rather, most producers of finished goods actually compete with each other multi-dimensionally, and this is even more true in service markets, which can be highly differentiated. In these markets, **price is just one dimension of the competitive rivalry, along with quality, service, reputation, innovation, and a host of other factors that distinguishes the offering of one competitor from another**.

Remarks at the 32nd Annual Antitrust & Consumer Protection Seminar Washington State Bar Association – November 4, 2015 Stephen Weissman, Deputy Director, Bureau of Competition, Federal Trade Commission

Competition law and innovation

1) The relationship between competition and innovation is complex
(Schumpeter, Arrow, Aghion)

2) Static efficiency is much less important than dynamic efficiency for economic growth and welfare

3) European competition law is focused on static issues and on per se approaches (market definition, dominance, static exclusionary effects, pricing abuses, violations by object). The impact of practices or transactions on dimensions other than prices (quality, innovation,efficiency) are not systematically taken into consideration .

4) US competition authorities are more willing to take into consideration dynamic effects of competition (ex use of the concept of innovation markets)

5) In European law there have been a few developments recognizing the usefulness of the concept of innovation markets in the EU Commission regulatory pronoucements but little use of this concept in enforcement

The AT&T/ NCR merger decision (Case No IV/M.050 -AT&T / NCR), 1991

An (…) important aspect of the proposed concentration is the possible combination of AT&T's know-how and manufacturing capacities within the telecommunication and network processing businesses with those of NCR in its computer and, in particular, its workstations businesses.

Considering the strength and market position of the parties on their respective markets, the concentration could lead to a strengthening of NCR's leading position on the workstations markets. This aspect of the concentration also needs to be appraised according to Art. 2(1)(b) of the Merger Regulation.

Case No IV/M.050 -AT&T / NCR, 18.01.1991

The AT&T/NCR merger decision

28. The question remains whether there is a high probability that this concentration would enhance the position of NCR in the workstation market by a flow of technical and marketing knowhow in the future.

There is a potential complementarity in the technical field and the marketing of workstations and communication products, and **these synergies may give AT&T/NCR the chance of developing more advanced communication features at lower cost, although to date in similar cases, such potential synergies have never been realised.**

Case No IV/M.050 -AT&T / NCR, 18.01.1991

The AT&T/NCR merger decision

30**. It is not excluded that potential advantages flowing from synergies may create or strengthen a dominant position**. In this case, however, AT&T/NCR have to face important competitors such as IBM, Siemens/Nixdorf, Olivetti, CGE. These companies are active in the computer field as well as in the telecommunications sector(2). **The possible advantages which AT&T hopes to gain from this concentration are for the moment theoretical and have yet to be proved in a future market place.** To date, **similar attempts to combine computer and telecommunications business have all failed or at least not yet fulfilled the expectations which motivated the participants** (e.g. Siemens/Nixdorf).

31. **On the basis of the information currently available to the Commission concerning the present situation and future developments in these markets, these potential benefits to AT&T/NCR do not lead to the conclusion that the concentration will result in the creation or strengthening of a dominant position**.

Case No IV/M.050 -AT&T / NCR, 18.01.1991

EC concern with mergers when innovative firms are the target

Margaret Vestager “Competition: the mother of invention”, European Competition and Consumer Day, Amsterdam, The Netherlands, April 18, 2016.

“**One of the simplest defenses against innovation is to buy up rivals that create innovative products**. That’s why, when we look at high-tech mergers, we don’t just look at whether they may raise prices. We also assess whether they could be bad for innovation.”

“Our rules decide which mergers need to be notified to us based on the turnover of the companies involved. So **when someone buys up an innovator, with a lot of good ideas but not yet much in the way of sales, we might not even have the chance to look at whether that merger will be bad for innovation**. That’s why I announced last month that we’re looking at whether to change the thresholds for notification, to make sure we get a look at this type of merger.

EC Concern with mergers which may restrict innovation

"The EU framework for merger control allows the Commission to assess the impact of mergers and acquisitions on innovation.

The framework puts the competitive harm caused by reduction of innovation on an equal footing with increased prices and reduced output. […]."

The policy brief refers to provisions in the European Commission's Horizontal Merger Guidelines and Non-Horizontal Merger Guidelines that cover the treatment of innovation in merger analysis: **innovation can affect the assessment of market power, efficiencies and remedies in merger control**.

The "EU Merger Control and Innovation," policy brief

The Dow/Dupont EU Merger case

The Dow/Dupont EU Merger case

(27 March 2017 M.7932) Merger approved conditional in particular on the divestiture of major parts of DuPont's global pesticide business, including its global R&D organisation.

“The transaction would have had a significant impact on innovation competition by:

-**Removing the parties' incentives to continue to pursue ongoing parallel innovation efforts**” (…) Other competitors have no or more limited R&D capabilities (e.g. as regards geographic focus or product range).

After the merger, only three global integrated players would remain to compete with the merged company, in an industry with very high barriers to entry.

The number of players active in specific innovation areas would be even lower than at the overall industry level.

The Dow/Dupont EU Merger case

"While not being new, the debate on the effect of mergers on innovation has been particularly lively in Europe since the European Commissions use of a broader innovation theory of harm in the recent Dow/DuPont case.

In previous merger cases, the Commission's innovation concerns were about the development and commercialization of well-defined pipeline products for which a substantial part of the R&D process has been completed.

In contrast, in the merger between Dow and DuPont, the Commission considered the effects of the merger on overall R&D investments, including those for products and technologies for which the research part of the R&D process will be performed after the merger takes place."

Bruno Jullien, Yassine Lefouili, "Horizontal Mergers and Innovation", March 2018

Dow DuPont merger decision: Justification for the unilateral effect theory of harm on incentives to innovate

(40) **A merger between two out of a limited number of innovators is likely to reduce competition in innovation, and thus limit the overall rate of innovation**. **This conclusion is supported by a number of articles - see for example Gilbert (2006b), Gilbert and Greene (2015), Shapiro (2010) , Shapiro (2012) and Whinston (2012).**

(41) **The intuition for this proposition relies on the standard logic of unilateral effects**. (…) when competing against other firms for the introduction of new products, **each firm imposes a "negative externality" on its competitors**. If it is successful in introducing a new product, the innovator will capture profitable sales from its rivals. A merger between two potential innovators internalises the negative innovation externality. In other words, **from the perspective of each innovator, the lost expected profits on the products of the other merging firm become an opportunity cost of innovating. Following a merger the opportunity cost—that was not present before—leads to lower incentives to innovate for each of the two firms (absent merger-specific efficiencies).**

Dow DuPont merger decision: No significant offsetting effect on incentives to innovate by competitors

(45) In some economic models of oligopoly, **less innovation by the merged entity may lead to a reaction by non-merging parties** in the form of higher innovation effort (in the absence of capacity constraints). Even **if this potential offsetting effect is present, it is however typically of lower magnitude than the first-round reduction of innovation effort by the merging parties in a concentrated market, thus leading to lower overall innovation** (**see the discussion in Whinston (2012), and the specific illustration in Motta and Tarantino (2016)**).

Theoretical backing for the Commission's decision

Two sets of recent papers, are often regarded as providing the theoretical underpinnings of the Innovation Theory of Harm

Federico G., G. Langus and T. Valletti (2017), "A Simple Model of Mergers and Innovation," Economics Letters, 157: 136-140.

Federico G., G. Langus and T. Valletti (2018), "Horizontal Mergers and Product Innovation: An Economic Framework," available at SSRN: https://ssrn.com/abstract=2999178.

Motta, M. and E. Tarantino (2017), "The Effects of Horizontal Mergers When Firms Compete in Prices and Investments," CEPR DP n. 11550.

Vincenzo Denicolò and Michele Polo: The innovation theory of harm:An appraisal

"**Even though these articles are nice analytical contributions, in our opinion they make restrictive assumptions and overlook important economic effects. In this paper, we highlight the restrictive assumptions and discuss some of the effects that may countervail those identified by Federico et al. and Motta and Tarantino**"

The innovation theory of harm:An appraisal (Vincenzo Denicolò and Michele Polo)

In its recent decision on the Dow-DuPont case, **the European Commission has adopted an innovation theory of harm (IToH), which holds that even horizontal mergers whose static effects are benign may be regarded as anticompetitive in a dynamic perspective, as mergers generally stifle innovation.**

This paper critically assesses the IToH, arguing that **its theoretical foundations are too fragile to be the basis for radical policy changes. Antitrust authorities and the courts should continue to consider the impact of horizontal mergers on innovation, bearing in mind that the effect can go either way.**

Better coordination of RD after the merger

Vincenzo Denicolò and Michele Polo:The innovation theory of harm:An appraisal

However, in our companion paper (Denicolò and Polo, 2018) we have shown that (the) analysis rests on a restrictive assumption (…).

The assumption is that the returns to R&D not only decrease but decrease sufficiently fast. The stronger condition is needed because in addition to internalizing the externality, the merged firm can also better coordinate the R&D activity of its research units.

Denicolò and Polo (2018) show that when the returns to R&D do not decrease too fast, such **better coordination may increase total R&D investment and the rate of innovation**. (…) we elaborate on this result, discussing the conditions that make such a benign outcome more likely. **We argue that the conditions are often realistic.**

Better coordination of RD after the merger

Vincenzo Denicolò and Michele Polo:The innovation theory of harm:An appraisal

(…) in fact, it may be optimal for the merged entity to choose asymmetric levels of R&D investments, as we have shown in Denicolò and Polo (2018). As soon as one recognizes this possibility, it becomes apparent that the merged entity may decrease the R&D expenditure in one research unit to internalize the externality, reducing the risk of duplication, and increase the expenditure in the other to take advantage of the reduced risk. In this case, a merger may well increase the probability of success

As this intuitive discussion suggests, **whether a symmetric or asymmetric investment strategy is optimal for the merged entity depends on the relative strength of two opposing effects: the size of the risk of duplication on the one hand, and the rate at which the returns to R&D diminish on the other hand**.

Innovation may not be firm specific

Vincenzo Denicolò and Michele Polo:The innovation theory of harm:An appraisal

"Motta and Tarantino (2017) (assume) that the innovations achieved by one firm can be applied only to that firm's production plants or products, both before and after the merger.(…)

In many cases, this assumption seems unrealistic. Very often, new technologies developed by a firm can in principle be used also by others. **When innovation is not firm-specific, mergers may spur innovation by facilitating the sharing of innovative technological knowledge among the merging firms.This expands the scope of application of the new technologies, increasing their value and hence the merged entity's incentive to innovate.**

We argue that **this effect may be so strong that a merger may increase total output and reduce prices, thereby benefiting consumers, even in the absence of static production synergies.** This is true both in models of one-stage innovation (section 3) and also in richer models of two-stage, sequential innovation (section 4)".

Innovation may not be firm specific

The setting in which this mechanism is best demonstrated is one where innovations are incremental. In other words, the innovation does not create a new market but improves the technology in a market that is already active. **Such incremental innovations may take the form of cost reductions, quality improvements, or a combination of the two.**

To a first approximation, **the value of incremental innovations is proportional to the output level which they are applied to**.

The impact of mergers on innovative activity therefore depends, in this framework, on their impact on output levels. We shall argue that **since the merged firm gets bigger, it can apply the innovations it achieves to a greater volume of output. This increases the value of the innovations for the merged firm, and hence its incentives to innovate**.

This simple mechanism rests on three premises. Firstly, the merged firm must indeed get bigger than any of the merging firms. Secondly, the same innovation must be applicable across various production plants, or products, of the merging firms. In the economics jargon, innovations must be non-rival. Thirdly, the merger must facilitate the sharing of innovative technological knowledge.

Ambiguous effects on the incentives to innovate

Vincenzo Denicolò and Michele Polo:The innovation theory of harm:An appraisal

In this paper, we have discussed the claim – known in the recent policy debate as the innovation theory of harm – that mergers generally reduce innovation in the absence of specific synergies in research. We argue that this claim should be regarded with some caution as it contradicts the mixed findings of a wide literature on competition and innovation. And, indeed, the claim does not seem to be supported by economic analysis. **There do exist mechanisms whereby mergers reduce innovation, but there are also others by which mergers spur innovation. Both types of mechanisms are sound, robust and empirically relevant, not simply theoretical curiosities.**
In particular, in this paper **we have focused on two mechanisms that may generate a positive impact of mergers on innovation, the coordination of R&D projects and the sharing of new technological knowledge. But other positive mechanisms also exist.**

The question whether mergers are more likely to stifle or spur innovation is therefore, ultimately, an empirical one. Unfortunately, the available empirical evidence does not seem to be conclusive either. **When all is said and done, the question can be attacked only on a case by case basis, building on the facts of each specific case**.

Bruno Jullieny Yassine Lefouili, Horizontal Mergers and Innovation, March 2018

"This paper discusses the effects of horizontal mergers on innovation.

We rely on the existing academic literature and our own research work to present the various positive and negative effects of mergers on innovation. **Our analysis shows that the overall impact of a merger on innovation may be either positive or negative and sheds light on the circumstances under which each of these scenarios** is likely to arise. We derive a number of policy implications regarding the way innovation effects should be handled by competition authorities in merger control and highlight the differences with the analysis of price effects".

Product innovation

Bruno Jullien, Yassine Lefouili, Horizontal Mergers and Innovation, March 2018

We pay special attention to the recent theoretical papers by Federico, Langus and Valletti (2017a, 2017b) as they formalize the arguments that the Commission used in the Dow/DuPont case.

With respect to product innovation we consider the **innovation diversion effect, the demand expansion effect, the margin expansion effect, the spillover effect**

In particular, we argue that these two papers provide only a partial picture of the impact of mergers on innovation and do not justify the authors claim that a merger between two out of a limited number of innovators is likely to lead to a reduction of innovation in a market characterized by limited knowledge spillovers and in the absence of other possible countervailing efficiencies. In contrast, Bourreau, Lefouili and Jullien (2018) show that **the overall impact of a merger may be positive even in the worst-case scenario in which the merger leads to monopoly and there are neither spillovers nor efficiencies.**

Various effects on product innovation

Bruno Jullien, Yassine Lefouili, Horizontal Mergers and Innovation, March 2018

(…) the **innovation diversion** effect (…)stems from the impact that a firm's innovation has on its rivals sales. (…) this impact can be either positive or negative. In the latter scenario, the internalization of this externality affects negatively the merged entity's incentives to invest in R&D, while it affects them positively in the former scenario.

(…) the **demand expansion** effect. This effect is positive and captures the idea that the margin increase induced by a merger provides the merging firms with higher incentives to innovate in order to increase their demand.

The (…)**margin expansion** effect: in the absence of efficiency gains, a merger leads to a decrease in the merging firm's output, which lowers the firm's incentives to innovate in order to increase their margins (by setting higher prices).

(…) the **spillover effect.** As has been emphasized in the literature, a given firms investment in R&D may not only benefit the firm itself but also its rivals through technological spillovers. When such a positive innovation externality exists, it creates another channel through which a merger can lead to more innovation.

Process innovation

Bruno Jullien, Yassine Lefouili, Horizontal Mergers and Innovation, March 2018

(…) we discuss the in-depth theoretical study of this issue by Motta and Tarantino (2017).

Their analysis is grounded on the existence of a variant of our margin expansion effect: a firms benefit from investing in a cost-reducing technology is lower if its output is smaller. In the absence of efficiency gains in production, a horizontal merger leads to higher prices and smaller output. This creates a channel through which a merger may decrease the merging firms incentives to invest in process innovation.

However, (…)this need not be the only effect. First, knowledge spillovers generate a countervailing effect that could lead to a positive overall effect on innovation.

Second, when investments are observable by rivals, a new strategic effect appears, which makes the impact of a merger generally ambiguous. We then analyze the R&D complementarities that a merger may induce and show how they may boost innovation. We also argue that non-R&D related cost reductions induced by a merger should be taken into account not only to assess the effect of a merger on prices but also to analyze its impact on innovation.

Process innovation

Bruno Jullien, Yassine Lefouili, Horizontal Mergers and Innovation, March 2018

We argue that a presumption of a negative impact of mergers on innovation in R&D-intensive industries is not supported by our knowledge of how a merger impacts innovation. **We contend** instead **that competition authorities should perform a thorough balancing exercise of the opposite effects altering firm's incentives to innovate. We also claim that all the effects of a merger on the incentives to innovate should be part of the main competitive assessment carried out by competition authorities. In particular, it should include the analysis of spillover effects**.

2) Disruptive innovations

Sustaining and disruptive innovations

Sustaining innovation takes place within the value network of the established firms and gives customers something more or better in the attributes they already value.

− Disruptive innovation takes place outside the value network of the established firms and introduces a different package of attributes from the one mainstream customers historically value.

As Christensen describes it, within the value network, incumbent firms tend to improve products constantly, so as to pull the market upwards towards the high-end. This leaves the door open for other firms to come from a neighbouring market and start offering low-end products that meet the basic requirements of the value network and offer additional value (outside of the value network).

If these other firms are successful in gaining a foothold on the low-end of the market, the value network will be redefined on their terms, and they will supplant the incumbent firms.

Note by Alexandre de Streel and Pierre Larouche, Disruptive Innovation and Competition Policy Enforcement, OECD, 2015

Disruptive innovations

Disruptive innovation is not a new phenomenon: in the past, the advent of **the automobile (replacing horse-drawn carriages), of the telegraph (replacing mail) and of the phonograph (replacing live performances) can all be presented as disruptive innovations**, with the one proviso that the disruptive innovations started as luxuries and it took some time before their cost of production were reduced such that they could displace existing technologies.

Many disruptive innovations now benefit from the characteristics of digital technologies such as: **network effects**, which may be direct or indirect, leading to market tipping; **reduction of costs allowed by the reduction of intermediation**; and **scalability** providing rapid access to a potentially global customer base.

Note by Alexandre de Streel and Pierre Larouche, Disruptive Innovation and Competition Policy Enforcement, OECD, 2015

Disruptive innovations and market entry

From a business perspective, disruptive innovation offers an **alternative path to market entry** and growth, in addition to the more traditional path of challenging the incumbent firm(s) head on, via sustaining innovation or more statically via cheaper products or superior marketing, for instance.

Because it **avoids frontal competition**, a disruptive innovation strategy can **allow the disruptor to grow 'under the radar' of incumbent firms** and, if successfully executed, can offer more growth potential..

Note by Alexandre de Streel and Pierre Larouche, Disruptive Innovation and Competition Policy Enforcement, OECD, 2015

Competition concerns with respect to disruptive technologies

-Risk that one or more **incumbent firm(s) can try to prevent disruption from happening** by depriving the disruptor from the ability to create an interface or an overlap between its innovative product and the existing value network**.** (Microsoft 2004)

Risk of **a merger eliminating a disruptive technology innovator** (Steris/Synergy)

Merger leading to a disruptive technology Innovation (ATT/NCR)

Collusive agreement on the adoption of a standard which eliminates or prevents the development of a disruptive Innovation

Lobbying by threatened firms for the creation of regulatory obstacles to the development of disruptive Innovators.

Competition and disruptive innovations

20. With disruptive innovation, **competition takes place at the level of market definition: the aim of the disruptor is, by starting from a product which would normally be on another relevant market**, to create sufficient overlap with the value network of the existing market in order to attract customers away from the existing market.

For instance, **once browser-centric computing came to disrupt the traditional PC software markets, the market for operating systems did not vanish away – nor did Microsoft's position on that market – but it faded in significance, and the focus of competition policy turned to firms such as Google**.

Note by Alexandre de Streel and Pierre Larouche, Disruptive Innovation and Competition Policy Enforcement, OECD, 2015

Challenges to competition law enforcement

Methodologically, **disruptive innovation can hardly be captured with the tools of market definition and market power analysis**, which do not account for the competition for the definition of the relevant market that is characteristic of disruptive innovation. In addition, competition authorities experience difficulties in acting quickly enough to deal effectively with attempt to prevent disruptive innovation.

Futhermore**, market shares** are not necessarily a useful indicator of market power as markets and relative positions can be very unstable when there are disruptive innovations (cf Microsoft / Skype)

Barriers to entry is not usually a useful concept in antitrust enforcement in cases of disruptive innovations as disruptors do not try to enter the market of the disrupted firms.

-Business models are frequently unstable and hence the concept of « **competition on the merits** » is not helpful to distinguish between anticompetitive and procompetitive practices.

Disruptive innovations and competition law enforcement: challenges

- It is very **difficult to predict the commercial potential for disprutive technologies** (cf Decision Stéris/Synergy)

-In a number of cases there may be a **trade-off between the emergence of disruptive innovations and the development of sustaining innovations**. In facilitating interconnection the competition authority may facikltate sustaining innovations and weaken the incentive for disruptive innovations.(cf Decisions Microsoft et Intel)

Competition authorities and disruptive innovations

The Facebook/ Instagram merger
OFT decision: 22 August 2012.

14. The OFT considered **two unilateral effects theories of harm: actual competition in the supply of photo apps and potential competition in the supply of social network services.**

15. Instagram allows users to take photos, apply digital filters to those photos, and then share those photos on the Instagram network or via other social networks. Facebook launched its mobile photo app in May 2012, weeks after it had announced that it would acquire Instagram. Facebook's app has similar functionality to Instagram's. It allows users to apply filters, tag photos, comment on photos, and post the photos to Facebook.

21. To conclude, there are several relatively strong competitors to Instagram in the **supply of camera and photo editing apps**, and those competitors appear at present to be a stronger constraint on Instagram than Facebook's new app. **The majority of third parties did not believe that photo apps are attractive to advertisers on a stand-alone basis, but that they are complementary to social networks. The OFT therefore does not believe that the transaction gives rise to a realistic prospect of a substantial lessening of competition in the supply of photo apps.**

The Facebook/ Instagram merger
OFT decision: 22 August 2012.

Potential competition in the supply of social network services.

29. In summary, **the evidence** before the OFT **does not show that Instagram would be particularly well placed to compete against Facebook in the short run**. In addition, there are other firms that appear to be presently able to compete against Facebook for brand advertising. For these reasons, the OFT believes that there is no realistic prospect that the merger may result in a substantial lessening of competition in the supply of display advertising.

Why Instagram Is The Top Social Platform For Engagement (And How To Use It)

MAR 28, 2017 Forbes Jayson DeMers , CONTRIBUTOR

Instagram's popularity has been growing steadily since it first debuted back in 2010.
With more than 500 million active users, it's currently the second most popular social media network in the world, behind only Facebook (unless you count YouTube), and marketers are falling more in love with the platform.

In fact, the number of advertisers on Instagram has doubled over the past six months or so, to more than one million, in part due to the fact that Instagram is now considered the best social media platform for customer engagement.

Trade-off between sustaining innovations and disruptive innovations. EC Microsoft (2004) and Intel decisions

16. It appears that **in the few cases where antitrust agencies are required to address markets where innovation plays a role, their emphasis is on existing platforms and value networks and, as a consequence, on sustaining innovation, as opposed to disruptive innovation.**

Indeed, some of the most prominent exclusionary conduct cases in Europe, Microsoft, and Intel, related to existing platforms and value networks of the relevant dominant companies and particularly concerned sustaining innovation.

In the Microsoft case, the European Commission attempted to safeguard competition from Sun and Novell (in the area of operating systems) and of RealNetworks (in the market of media players) while in Intel the Commission aimed to secure competition between Intel and AMD in the market for CPUs for personal computers.

Trade-off between sustaining innovations and disruptive innovations.
Microsoft (2004) and Intel Decisions

17. In the meantime, **it has however become clear that the arrival of disruptive innovation in the form of the internet and internet-based services have significantly reduced the significance and importance of Microsoft's operating system**.

The same applies to Intel's market position on the market for CPUs for desktops; **the trends of tablets and smartphones has created room for CPU manufacturers such as ARM and Qualcomm**.

Microsoft, Google and the trade-off between sustaining innovations and disruptive innovations

Although the Commission tried to preserve sustaining innovation in this market, it seems the competition concerns were rather solved by disruptive innovation coming from Google and others who brought the internet to the forefront diminishing the significance of Microsoft's dominant position in the market for PC operating systems.

In the ongoing Google investigation the Commission still appears to concentrate on preserving sustaining innovation in the market for search engines, while disruptive innovation coming from other internet platforms, such as social networks, and mobile applications may reduce the relevance of Google's position in this market.

Graef, Inge; Wahyuningtyas, Sih Yuliana; Valcke, Peggy (2014) : How Google and others upset competition analysis: disruptive innovation and European competition law, 25th European Regional Conference of the International Telecommunications Society (ITS), Brussels, Belgium, 22-25 June 2014

3) Multi-sided markets and competition law

Elements of two-sided markets

Two-sided markets are served by platforms that have:

1. two distinct groups of consumers
2. indirect externalities exist across groups of consumers, and
3. a price structure is non-neutral
4. No possibility for the two groups of consumers to alter the allocation of costs decided by the platform through side payments

Pricing on two-sided markets

Pricing in two-sided markets has received considerable attention in formal economic research. The main result is **that pricing to one side of the market depends not only on the demand and costs that those consumers bring but also on how their participation affects participation on the other side and the profit that is extracted from that participation.**

In a one-sided market, we can characterize the price– cost mark-up in terms of elasticity of demand and the marginal cost.

But in a two-sided market, pricing decisions will also include the elasticity of the response on the other side and the mark-up charged to the other side. Since the platform faces a similar computation on the other side, prices on both sides of the market depend on the joint set of demand elasticities and marginal costs on each side (Rochet and Tirole, 2003, 2006; Weyl, 2009)..

Rysman, Marc. 2009. "The Economics of Two-Sided Markets." Journal of Economic Perspectives, 23(3): 125-43.

Pricing on two-sided markets

This result has important implications for prices.

For instance, in any market, prices typically fall as the price elasticity of demand increases, but in a two-sided market the effect can be even larger:

The low price on one side not only attracts elastic consumers on that side but also, as a result, leads to higher prices or more participation on the other side. The increased value extracted from the other side magnifies the value of having consumers on the first side, which leads to a yet bigger price decrease and quantity increase for the side that experiences the increase in elasticity

Rysman, Marc. 2009. "The Economics of Two-Sided Markets." Journal of Economic Perspectives, 23(3): 125-43.

Temptation to treat each side of multi-sided markets separately

The error of treating each side of the market in isolation is even easier to make when in one of the sides the product is priced at zero. In that side one does not think of firms as competing for sales. **Thus, it is easy to think of shopping malls as renting space to retailers, ignoring the services offered to shoppers**; Adobe as selling document production software, ignoring the services offered to readers; Palm as selling software and hardware systems for personal data management, ignoring the services offered to application developers, **and television stations as selling advertising, ignoring the services offered to viewers**. In all these cases, the pricing and production decisions are inextricably intertwined.

OECD, Secretariat Background note, Policy Roundtable on Two-sided Markets, 2009

The « Groupement des cartes bancaires » ECJ decision

78 In order to assess whether coordination between undertakings is by nature harmful to the proper functioning of normal competition, **it is necessary**, in accordance with the case-law referred to in paragraph 53 above, **to take into consideration all relevant aspects – having regard, in particular, to the nature of the services at issue, as well as the real conditions of the functioning and structure of the markets – of the economic or legal context in which that coordination takes place, it being immaterial whether or not such an aspect relates to the relevant market.**

79 **That must be the case, in particular, when that aspect is the taking into account of interactions between the relevant market and a different related market** (see, by analogy, judgments in Delimitis, C-234/89, EU:C:1991:91, paragraphs 17 to 23, and Allianz Hungária Biztosító and Others (EU:C:2013:160), paragraph 42) and, all the more so, when, as in the present case, there are interactions between the two facets of a two-sided system.

ARRÊT DE LA COUR , C 67/13 P, 11 septembre 2014

The limits of traditional tools used in antitrust analysis

The economics literature to date has shown **that a number of the standard economic models, theorems, and tools that are relied on in antirust do not apply to multisided platform businesses without significant modification**.

The following is a not necessarily complete compendium of known and well-documented problems with applying results based on single-sided analysis to multisided platforms:

- **The Lerner Index based on the elasticity of demand for a single group of customers does not hold**.
- **The SSNIP test is wrong conceptually when applied to one group of platform customers**.
- **Critical loss formulas based on diversion ratios and estimates of the elasticity of demand for a single group of customers are wrong**.

David S. Evans , The Consensus among Economists on Multisided Platforms and Its Implications for Excluding Evidence that Ignores It, 13 April 2013

The limits of traditional tools used in antitrust analysis

- **Estimates of structural models are biased if the econometric model specified does not consider the demand interdependencies**.

- **The upward pricing pressure formulas derived for single-sided firms are wrong for multisided platforms**.

- **Price less than marginal cost for one group of customers is consistent with non-exclusionary profit-maximizing behavior**.

- **The conditions under which a tie could exclude competition found by traditional models do not apply**.

In many of the cases above the multisided **platform literature has derived extensions of single-sided formulas to the multisided platform context. Unfortunately, many of the simple formulas used for "back of the envelope" calculations turn out to be quite complicated for multisided platforms and require much more information to implement**.

David S. Evans , The Consensus among Economists on Multisided Platforms and Its Implications for Excluding Evidence that Ignores It, 13 April 2013

Ex : SSNIP test

Should a single SSNIP test be applied to both sides of the market, or should a separate test be applied to each side?

In the First Data case, the DoJ looked at both sides of PIN networks separately and only applied the SSNIP test to the merchant side (it is on this side that anticompetitive effects were deemed most likely).

Whether this was the right decision is debatable. Some **economists argue that a single "platform" market should be defined when users on both sides of the platform conclude tangible transactions** (i.e. a financial transfer in exchange for a good or service) which is the case of most card networks and not the case of most advertising platforms.

Dirk Auer and Nicolas Petiti: Two-sided markets and the challenge of turning economic theory into antitrust policy", The Antitrust bulletin, October 6 2015

Ex : SSNIP test

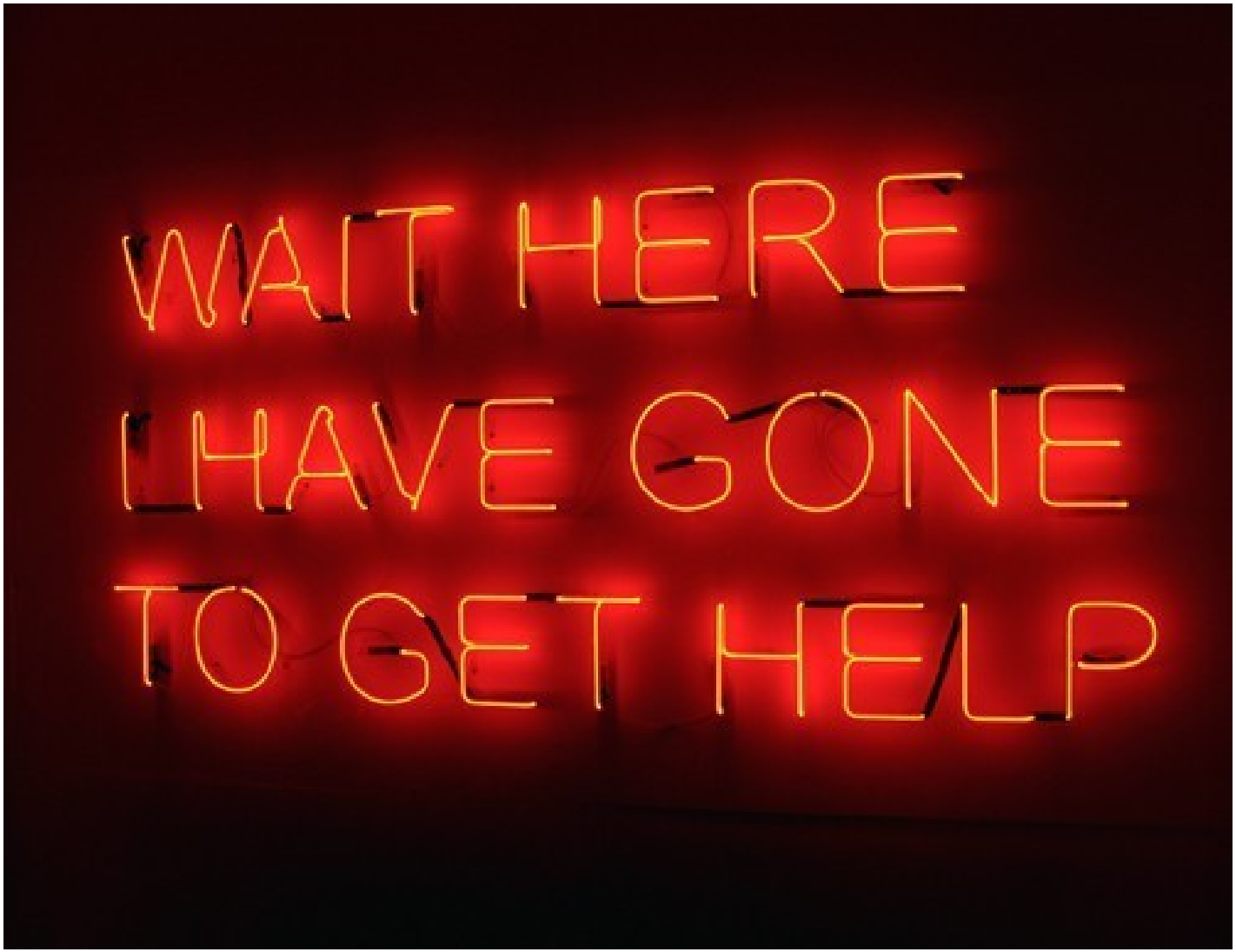
Market definition is also complicated when one side receives the platform's services free of charge.

A platform may charge its entire transaction fee on one side of the market only.

In such cases, should the SSNIP only be applied to the "money" side? And what if the price increase were also applied, in full or part, to the other side ? 10% or less of zero is still zero.

Dirk Auer and Nicolas Petit: Two-sided markets and the challenge of turning economic theory into antitrust policy", The Antitrust bulletin, October 6 2015

Competition authorities and multi-sided markets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TO GET HELP

OECD Competition Committee

OECD investigation plan

Market definition in multi-sided markets

Measuring market power in multi-sided markets

Exclusionary Conduct in multi-sided markets

Vertical Restraints in multi-sided markets

Exploitative Conduct in multi-sided markets

Efficiency effects in multi-sided markets

Single market or two-sided market?

(……) it is the **magnitude of the cross-platform network externality** that determines how big a mistake it is to overlook it and treat the product as one-sided.

(….) For example, a strong cross-platform network externality that exists on more than one side of the market creates feedback loops that can mean the consequences of the platforms' actions are much greater than they might appear at first sight.

(…) Therefore, **while a wider set of markets may exhibit small cross-platform network externalities, the externalities will only be large enough to be important for the analysis in a smaller set of markets**.

Therefore, **where there is a cross-platform network externality, the value of adopting a multi-sided approach should at least be considered, and the rationale for deciding not to do so explained**.

For market definition, legal considerations are more important than economic considerations

1) Provided the competitive effects analysis examines the interrelationship between the different sides or markets, the framing of the market definition as a multi-sided market or as multiple interrelated markets, or indeed the absence of a market definition, need not distort the conclusion.

2) However, where two interrelated markets are identified, efficiencies would typically need to accrue within the same market as the loss of competition in order to affect the outcome of the case.

Therefore, where cross-platform network effects are important, and a market definition is required, defining a single two-sided market would ensure that the assessment as a whole is based on the full set of possible competitive and efficiency effects, and that no effect is arbitrarily excluded.

Assessing market power on two-sided makets

The interrelationship of pricing across the platform, and the need to reflect this in whichever tools are used, means that is not possible for a multi-sided platform to have market power on only one side of the market.

Either it has a degree of market power as a platform, or it does not.

It is therefore not meaningful to conclude that a platform has market power on one-side of the platform.

Where market power is measured using tools that look at the responsiveness of demand, (such as price elasticity of demand, Lerner index, UPP) these will need to be adjusted to reflect the impact of cross-platform network effects. This is because strong cross-platform network effects and feedback loops change the responsiveness of demand. **Failing to account for this change may therefore lead to a misunderstanding as to the closeness of competition between two firms.**

Impact of a price rise on one side of a two-sided platforms

The impact that a price rise on side A of the platform will have can be separated into three effects:

1) **As the price rise on side A, demand for A will fall**. This effect is simply the elasticity of side A's demand with respect to the price of A, and so this first effect is likely to be negative.

2) **If there is a price rise on side A , demand for B will fall** (as those on side B respond to the reduced demand on side A). This effect is the elasticity of side B's demand with respect to the price of A. If the cross-platform network externality is positive (e.g. buyers like there to be more sellers), this second effect is likely to be negative.

3) **If price rise on side A, the price on side B will fall, which increases demand for B and hence will also increase demand for A.** The reason that the price on side B falls, is that increasing the margin on side A increases the incentive to raise participation on side B, since this extra participation attracts more high-margin sales on side A. This effect is the elasticity of B's price with respect to the price of A (the rebalancing effect). If the cross-platform network externality is positive, this third effect is likely to be positive, and therefore to somewhat counteract the first and second effect.

Overlooking this third effect may therefore lead to overestimating the negative impact on volume of a price rise on side A.

Exclusion a greater concern for multi-sided markets than for single-sided markets

In the case of exclusivity contracts, the risk is greater because these contracts may affect users on side B of the market who are not party to a contract agreed between the platform and users on side A, and whose interests may differ.

In contrast, in one-sided markets it is sometimes suggested that exclusivity agreements are not likely to harm consumers because it is not in the interests of competing retailers to make exclusivity agreements with manufacturers if the effect is to increase the price that they have to pay.

However, in a multi-sided market it cannot be assumed that users on side B will consider the impact on users on side A and refuse to participate in an exclusivity agreement with a platform that excludes other platforms and harms users on side A (but not those on side B)

4) The sharing economy

The sharing economy

What is the sharing economy?

Although there are no commonly-accepted definitions for the “sharing economy”, we can say that this **consumption model is based on the exchange, between private individuals, of goods and services that were previously unused or under-used, in exchange for a compensation agreed by the parties**. Some examples of these exchanges include the offering of free car spaces on a trip that one may be planning to go on, or of a house that is left empty during vacations, or of tools that have been used just once or twice, etc.

“Sharing exchanges” have certain specific characteristics that differentiate them from the rest of the new digital models, among which the following may be cited:

-**The exchange of goods and services takes place between private individuals, not professionals**, with said exchange not entailing the exercise of a remunerated professional activity by the supplier, although there may indeed be an economic exchange in the form of shared expenses or a compensation.

-**The goods and services exchanged were previously unused or under-used** by the supplier, and, therefore, these goods and services were not created or acquired to be offered on the market

The sharing economy and information technologies

"(….) the **development of information and communication technologies** and their application in the rendering of services has been **determinant for the new service delivery models to appear** and has defined their main characteristics, among which the following may be cited:

-The **use of internet as the main means for the interaction of supply and demand for products and services**. The universal presence of internet supposes the elimination of many of the barriers to exchange existing in traditional markets, at the same time allowing for the reduction of intermediaries and transaction costs, and benefitting consumers in terms of immediacy, information and comparison of available supply.

- The **use of virtual platforms that allow for great data management capacity, immediately and at low cost, which enables the efficient management of a large number of transactions in very liquid markets with relatively low initial costs**.

-The **use of mobile devices as a means to access these exchange platforms**, by way of specific applications that provide demand with immediacy and ubiquity of access to services.

Sharing economy and antitrust: horizontal or vertical agreements?

Traditional black-letter antitrust law suggests alternative approaches to how courts should treat a sharing economy enterprise.

One approach is to consider the agreements between suppliers and the platform to be "vertical agreements" subject to a fairly lenient rule of reason.

Another approach is to treat the agreements as a hub-and-spoke conspiracy, reflecting a horizontal agreement among suppliers to the enterprise orchestrated by the platform.

If a horizontal agreement is found, it will be subject to varying treatment depending on the level of competitive sensitivity. Agreements on price, one of the most competitively sensitive terms, may even be automatically illegal. Just this question is currently before a district court in New York in consumer antitrust litigation against Uber.

Mark Anderson and Max Huffman , "The Sharing Economy Meets The Sherman Act: Is Uber a Firm, a Cartel, or Something In Between?", SSRN

Potential competition concerns associated with sharing economy platforms

Panelists identified two potential antitrust concerns: **(1) the potential for so called "network effects" that can undermine competition, and (2) the potential for anticompetitive effects resulting from vertical integration**.

1) Once a platform becomes dominant, smaller rival platforms may be deterred from entering or fail to attract a sufficient number of buyers and sellers to successfully challenge the dominant incumbent platform. **However, in many sharing economy platforms, participants on both sides of the platform have the ability to switch easily or use multiple, thus "platform shopping disciplines the power of [platforms."** Additionally, some sellers might prefer a smaller network where they have less internal competition, for instance.

2) Some panelists were concerned that "if a vertically integrated platform controls a large portion of supply, buyers might be unwilling to switch to other platforms if those platforms do not have enough participating suppliers.“

FTC Issues Sharing Economy Report 29 November 2016

Consumer protection, regulation, competition and the sharing economy

There can be **tension between the twin goals of competition and consumer protection, and a key challenge for regulators is striking the right balance between ensuring adequate regulatory protection and allowing innovation, which can drive competition, to flourish.**

The FTC has cautioned regulators "not to impose legacy regulations on new business models simply because they happen to fall outside of existing regulatory schemes" because doing so could stifle competition and harm consumers.

Accordingly, Chairwoman Ramirez has expressed that regulatory measures "should be no greater than necessary" to address consumer protection concerns.

FTC Issues Sharing Economy Report 29 November 2016

Level playing field

Some workshop participants suggested that regulations should be the same for all suppliers, otherwise sharing economy providers would have an unfair advantage by bypassing existing regulations.

Commissioner Ohlhausen noted that **creating a regulatory environment that favors new entrants would be "just as undesirable as retaining regulations that deter meaningful entry."**

Some participants suggested that the way to level the playing field was by"deregulating down," not by "regulating up.“

Is BlaBlaCar a public transportation firm?

Madrid Feb 3 2017 - The Spanish judiciary has sided with the French ride sharing company BlaBlaCar in an unfair competition case brought by the Spanish confederation of bus transportation (Confebus) which claimed that it behaved as a public transporter without having the proper authorizations and that its drivers were benefitting from illicit profits.

Madrid's commercial court stated that the activity of Blablacar « is exclusively in the sector of private transportation" and that the platform « does not attempt to organise commercial transportation but to connect private individuals who wish to travel together and share the costs", without competing with buses.

The drivers « are not under contract with Blablacar, are not transportation firms and do not belong to the bus or transportation industry ».

Blablacar limits itself « to compute kms and to recommend under the threat of exclusion from the platform in case of abuse, the amount that the passeger should pay as a function of the distance and the total number of passengers ". The price indicated by the platform cannot be considered to be « a commercial price » and the fact that an individual may try to enrich himself by using the platform is exceptional and not in line with the objectives of BlaBlaCar..

Is Uber a transportation company ?

Judgment in Case C-434/15 Asociación Profesional Elite Taxi v Uber Systems Spain SL
20 December 2017

In today's judgment, the Court declares that an intermediation service such as that at issue in the main proceedings, the purpose of which is to connect, by means of a smartphone application and for remuneration, non-professional drivers using their own vehicle with persons who wish to make urban journeys, must be regarded as being inherently linked to a transport service and, accordingly, must be classified as 'a service in the field of transport' within the meaning of EU law. Consequently, such a service must be excluded from the scope of the freedom to provide services in general as well as the directive on services in the internal market and the directive on electronic commerce.

It follows that, as EU law currently stands, it is for the Member States to regulate the conditions under which such services are to be provided in conformity with the general rules of the Treaty on the Functioning of the EU.

5) Big Data

What changes to the classical model introduced by the emergence of « Big Data »

1) Economic actors, in particular **consumers, give information on themselves** through their pattern of consumption or of use of the digital medias.

2) This **information can be retrieved, stored, analyzed and synthesized by digital operators** who can then either use the information they have gathered or sell access to it.

3) Information on consumers (big data) **may be subject to scale economies and network effects.**

4) **Information is seen as an input in the strategic decisions of the firm rather than a condition of profit maximization.** There is a demand for the information supplied.

5) Thus **there is a market for information (big data) and the functioning of this market may have an influence on the functioning of downward markets**

Consumer as source of information

Competition issues associated with big data

1**) Access to big data as a barrier to entry** (scale economies , network economies, single homing versus multihoming) (Merger BazaarVoice/Power Review, merger Telefónica UK/Vodafone UK/Everything Everywhere)

Competition issues associated with big data

2**) Refusal to give access to data**

Is data an **essential facility** ?

Is the refusal to give access **discriminatory** ? (cf Cégédim)

Does the refusal to give access **restrict downstream competition** ?

Is **exclusive access** to data anticompetitive (cf Google cases)
Vertical integration?

Competition issues associated with big data

3) **Does big data facilitate price discrimination ?**

4**) Is there a risk of tying or bundling between data and services provided by the firm gathering the data?**.(cf affaire GDF-Suez)

5)**Does the use of big data increase transparency on oligopolistic markets .**

*6) **Has Facebook abused its possibly dominant position in the market for social networks with its specific terms of service on the use of user data***

Artificial Intelligence

Artificial Intelligence

Tuomas Sandholm (center) and Ph.D. student Noam Brown developed Libratus

Libratus; Brains vs Artificial Intelligence

Tuesday, January 31, 2017, Libratus, an artificial intelligence developed by Carnegie Mellon University, made history by defeating four of the world's best professional poker players in a marathon 20day poker competition, called "Brains Vs. Artificial Intelligence: Upping the Ante" at Rivers Casino in Pittsburgh. Once the last of 120,000 hands of Headsup, NoLimit Texas Hold'em were played on Jan. 30, Libratus led the pros by a collective $1,766,250 in chips.

The best AI's ability to do strategic reasoning with imperfect information has now surpassed that of the best humans," said Libratus cocreator in a press release.

"The computer can't win at poker if it can't bluff," Pfenning explained "**Developing an AI that can do that successfully is a tremendous step forward scientifically and has numerous applications. Imagine that your smartphone will someday be able to negotiate the best price on a new car for you. That's just the beginning**."

Artificial intelligence and challenges to Competition law enforcement

"**To the extent that the effects of increased oligopoly fall through cracks of antitrust law, the advent of the robo-seller may widen those cracks into chasms.** For several reasons, the roboseller should increase the power of oligopolists to charge supracompetitive prices: the increased accuracy in detecting changes in price, greater speed in pricing response, and reduced irrationality in discount rates all should make the robo-seller a more skillful oligopolist than its human counterpart in competitive intelligence and sales. … the robo-seller should also enhance the ability of oligopolists to create durable cartels"

-Salil Mehra,,Antitrust and the Robo-Seller: Competition in the Time of Algorithms, 100 Minnesota,Law Review 2015

Artificial intelligence and challenges to competition law enforcement

"a self-learning machine may find the optimal strategy is to enhance market transparency and thereby sustain conscious parallelism or foster price increases. Importantly, tacit coordination--when executed--is not the fruit of explicit human design but rather the outcome of evolution, self-learning and independent machine execution."

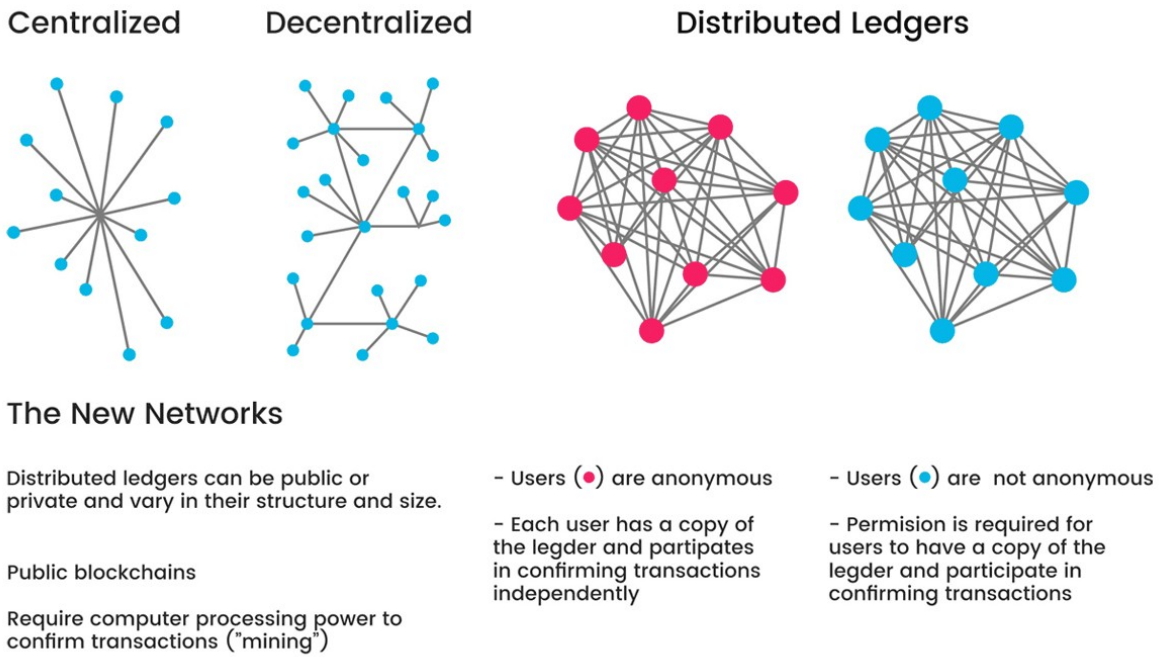
Maurice E. Stucke & Ariel Ezrachi Artificial Intelligence & Collusion: When Computers Inhibit Competition, University of Tennessee College of Law, Research Paper #267, May 2015

Blockchains

Blockchains

The main thing distinguishing a blockchain from a normal database is that there are specific rules about how to put data into the database.

That is, it cannot conflict with some other data that's already in the database (consistent), it's append-only (immutable), and the data itself is locked to an owner (ownable), it's replicable and available. Finally, everyone agrees on what the state of the things in the database are (canonical) without a central party (decentralized).



Blockchain technology and changes in the structure of firms

Blockchain technology might change the nature of some firms by reducing some of the transaction costs that explain why firms do not outsource more of their activities.

The standard theory of the firm suggests that in order to carry out a transaction in a market it is necessary to discover who it is that you wish to deal with, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed, and so on (Coase).

The development of the digital platform business model has reduced search and information costs, and while the costs of incomplete contracting are likely to remain significant (Grossman, Hart & Moore), **blockchain technology might be expected to reduce the costs of contract enforcement. This might lead firms to outsource more, and to outsource new, previously core functions to specialised, and perhaps smaller, firms (even individuals)**. This could therefore create new and potentially highly competitive markets in a similar way to the disruption cause by the digital platform business model.

Port of Rotterdam Partners With Blockchain Startup to Innovate Cargo Tracking

The Port of Rotterdam Authority has signed a cooperation agreement with Dutch blockchain startup CargoLedger to use the technology for cargo tracking, Transport Online reported yesterday, June 14th. **As part of its PortXL annual accelerator, the port authority has partnered with CargoLedger to implement a blockchain solution for tracking shiploads**.

The technology will be applied in order to improve quality control in supply chains and establish a transparent and secure system to innovate the management and handling of cargo.

The blockchain system will record and process data from labeled shiploads, which can be scanned by receivers in Rotterdam's ports in order to gain immediate insight into the conditions of the load, such as its temperature and humidity.

Blockchain's potential to provide a tamper-proof tracking of products and efficient data evaluation is being recognized by an increasing number of global logistics industry giants.

BMW, GM, Ford and Renault launch blockchain research group for automotive industry

May 2, 2018

Car makers **BMW, General Motors, Ford and Renault** are the big names behind a new group announced today to explore the potential of the blockchain in the automotive and mobility space.

MOBI — the **Mobility Open Blockchain Initiative**— launches today with over 30 founding members that also include Bosch, Blockchain at Berkeley, Hyperledger, Fetch.ai, IBM and IOTA. The group has a fairly broad goal of making transportation "safer, more affordable, and more widely accessible using blockchain technology."

MOBI's release declared:

"**MOBI is actively working with companies accounting for over 70% of global vehicle production in terms of market share**. MOBI and partners, including, BMW, Bosch, Ford, General Motors, Groupe Renault, ZF, Aioi Nissay Dowa Insurance Services USA and others **seek to foster an ecosystem where businesses and consumers have security and sovereignty over their driving data, manage ride-share and car-share transactions, and store vehicle identity and usage information.**"

MOBI said its scope of focus varies from payments, data tracking, and supply management, to consumer finance and pricing, and more futuristic areas like autonomous vehicles and ride-sharing systems.

Risks of anticompetitive use of blockchains

Blockchain consortia often involve direct competitors, **increasing chance of collusion in same or related markets**; Situation similar to planning discussions for classic R&D joint ventures – mitigation strategies may involve

Monitoring of anticompetitive agreements (transparency of transactions)

Collective boycott – what is the extent of participants' obligations to engage with others seeking admission to the consortium?

Standard setting – could agreed standards foreclose competing technology and / or be discriminatory?

Increased transparency leading to a weakening of competition on oligopolistic markets even without a collusive agreement

Blockchain technology, smart contracts and anticompetitive practices

Smart contracts might provide a commitment device that allows firms to soften price competition.

(…) smart contracts are codes that firms can write that can be trusted to self-execute if specified conditions unfold. This allows a firm to make a cheap but effective commitment, which might be useful for firms in a variety of settings.

The ability to commit might be pro-competitive. For example, it may help resolve hold-up problems, such as when two parties would like to make relationship specific investments, but neither wants to go first and sink their investment since this would give the counterparty the ability to extract all the value created by the relationship.

However, they might also allow firms to soften price competition. For example they might allow a firm to effectively commit to a price point by making it costly for it to move from that point. This might be done through low-price guarantees, most-favoured-nation clauses, or across platform parity agreements.

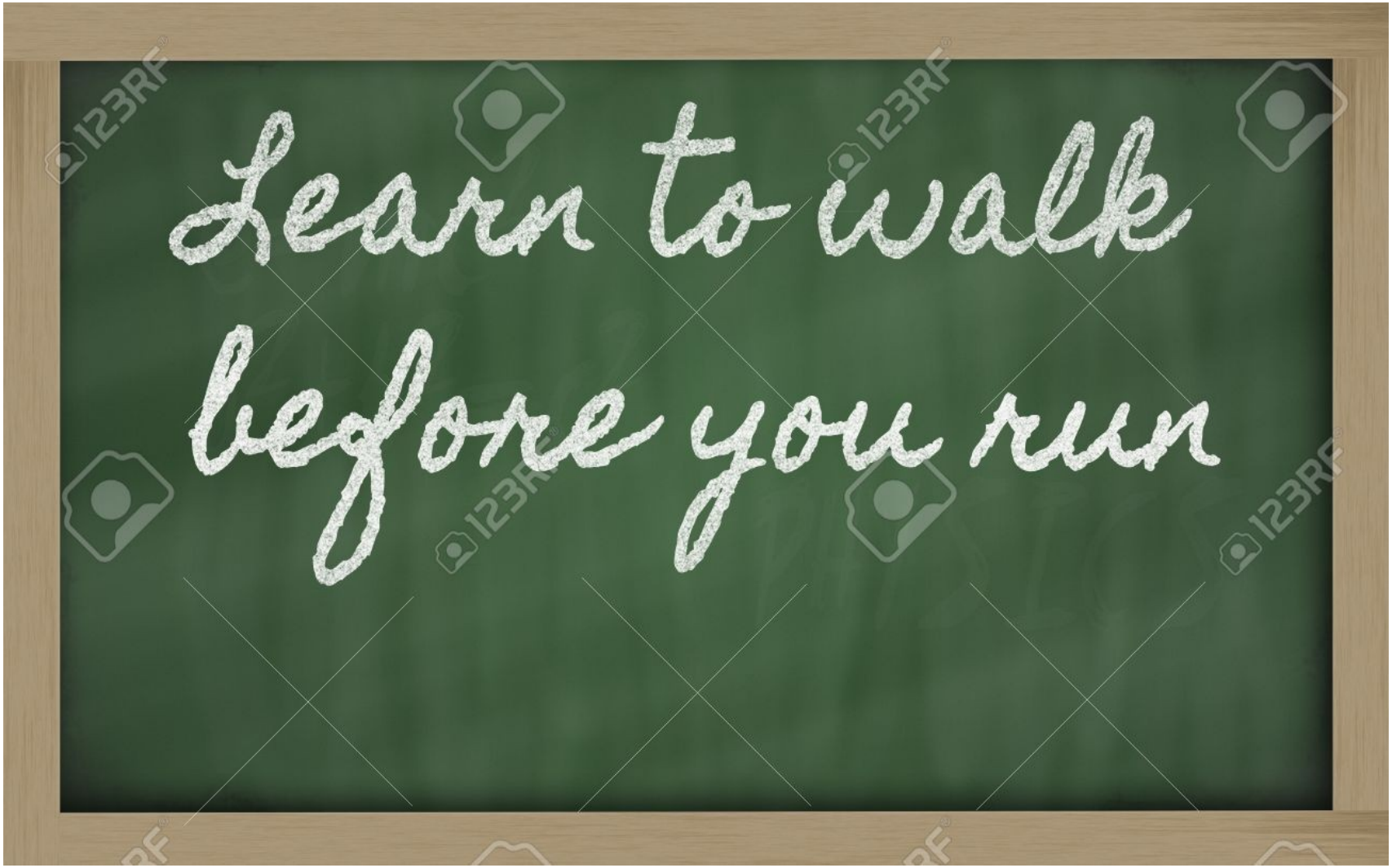
Meeting the blockchain competition challenges

-New block exemption regulation for blockchain consortia with x% share of horizontal market ?

- Updates to Guidelines on horizontal co-operation agreements with Commission's view on when transparency is likely to raise concerns?

- Regulatory sandbox :i.e. environment for businesses to test innovative products without risk of being 'punished' by regulators?

Conclusion


Learn to walk
before you run

Competition authorities will just keep crashing if they never take their eyes off the rear view mirror

Thank you very much

frederic.jenny@gmail.com