



# OECD Handbook on Competition Policy in the Digital Age



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# Foreword

**D**igital markets have posed significant challenges for competition law and policy frameworks in recent years. The OECD's work in this area has highlighted that the core concepts, principles and economic foundations of competition policy are as relevant as ever in these markets. In fact, many well-established theories of harm and core concepts will be vital to ensure that digital markets are dynamic and innovative. Anti-competitive mergers, agreements among competitors and vertical restraints can produce as much harm in digital markets as in traditional ones – in fact, some features of digital markets may amplify this harm.

At the same time, there will be a need for a solid understanding about the particular competitive dynamics in digital markets, increased attention to potential novel forms of misconduct and merger harms, and tailored remedies. There is also a growing consensus that at least some parts of the competition policy framework must be adjusted in response to digitalisation.

This Handbook distils the key messages of the OECD's work up to December 2021 on digital competition policy. It can serve as a resource for competition authorities and others in the competition policy community. Going forward, this body of work can be the basis for further research, practical guidance, and perhaps most importantly co-operation among jurisdictions, different policy areas and different regulators. Divergences among jurisdictions in terms of new digital competition policy measures being developed may create costs in terms of the efficiency of these measures and the burden required to comply with them. As a result, international and interdisciplinary co-operation will remain essential as policymakers and competition authorities seek to ensure that digitalisation reaches its full potential through vibrant, dynamic and competitive markets.



# Preface

**D**igitalisation has been a dominant topic of competition policy discussions in recent years, and the OECD has been at the forefront. The Competition Committee has served as a place for delegates to hear from leading experts about new issues, exchange experiences with digital markets, and identify common ground across jurisdictions. This Handbook distils the key messages of the Committee's work on digital competition issues, and I am confident it will be a valuable reference for competition authorities, and for economic policymakers more broadly.

The Committee's work on digital issues has been extensive. We have explored the dynamics of competition in the digital economy, including the business models, strategies and inputs that make these markets different. We have debated whether digital competition problems were unique, or whether they are simply variations on what is observed in any other market. We have discussed where the line should be drawn between competition enforcement and advocacy, and which issues are relevant for competition law as opposed to other areas such as consumer protection. Finally, we have heard a range of proposals to update competition enforcement tools, assessments and even legislation in response to digitalisation.

While differences of view remain, there are some areas of consensus. Many core principles of competition law remain relevant to our new digital realities. Competition authorities will need to pay particular attention to issues of dynamic competition and data in digital markets. Co-operation among competition authorities in different jurisdictions, and between competition authorities and other regulators – particularly consumer and data protection authorities, is fundamental.

The Competition Committee's work on digital competition issues is far from over, however. This Handbook is only the first part of confronting the challenges we face from digitalisation. The focus in many jurisdictions has turned to changes in competition legislation, and assessing the effects of past competition authority decisions. The results of early experiments, such as new merger notification thresholds, are beginning to provide insights.

More fundamentally, the unprecedented challenges brought by the COVID-19 epidemic may accelerate digitalisation, as more people work, learn and shop remotely. Enforcement and advocacy efforts will need to keep pace with these changes, showing citizens that competition law can be trusted to improve market outcomes and welfare in broad terms. The ideas contained in this document, while extensive, are therefore only the beginning of a long-term process of adaptation to our new, digital world.

A handwritten signature in black ink, appearing to read 'F. Jenny', with a stylized, cursive script.

Professor Frédéric Jenny,

Chair of the OECD Competition Committee

# How to use this handbook


**T**his handbook is a resource for navigating the OECD's work on digital competition policy issues, specifically the topics addressed in the OECD Competition Committee and its working parties, the Global Forum on Competition, and the Latin America and Caribbean Competition Forum until and including December 2021. The topics are organised into eight themes, accompanied by an introduction to the key issues, and a summary of the main insights for each topic. This document also contains a Glossary of commonly used digital competition terms.

The main source materials summarised in this document are OECD Secretariat background notes and executive summaries of OECD discussions.

The most up-to-date list of OECD resources on competition law and policy topics can be found at: [www.oecd.org/daf/competition/roundtables.htm](http://www.oecd.org/daf/competition/roundtables.htm).

## Accessing additional materials

Additional materials can be accessed by clicking on these icons at the bottom of the box for each topic. The materials include Secretariat background papers or other publications, and video content where available. Clicking on the "More resources" icon will provide the full set of OECD materials on the topic, including any available country contributions, expert papers, and detailed summaries.

 Background note • Issues Note • Publication

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# Glossary of key terms

## **Across-platform pricing parity agreement**

An across-platform pricing parity agreement (APPA) guarantees to a platform that the prices or terms and conditions quoted by suppliers on that platform will be as favourable as those offered on the supplier's own website (the narrow clause) or on any other platform (the wide clause) (OECD, 2018, p. 25<sup>[1]</sup>).

## **Algorithm**

Algorithms are sequences of commands that generate an output from a given input (OECD, 2018, p. 2<sup>[2]</sup>).

## **Big Data**

Big Data is commonly understood as the use of large scale computing power and technologically advanced software in order to collect, process and analyse data characterised by a large volume, velocity, variety and value (OECD, 2016, p. 2<sup>[3]</sup>).

## **Blockchain**

Blockchain or Distributed ledger Technology (DLT) is a shared ledger (or record) of transactions between parties in a network that is not controlled by a single central authority. It is a general purpose technology that crowd-sources verification services and therefore removes the need for a trusted third party to fulfil that role (OECD, 2018, p. 2<sup>[4]</sup>).

## **Bundling**

See "Tying".

## **Conglomerate mergers**

Conglomerate mergers bring together firms that are not currently market competitors, or in a supply relationship with one another. The products of the firms can either be complements, weak substitutes, or unrelated (OECD, 2020, p. 6<sup>[5]</sup>).

## **Consumer data**

Consumer data are data concerning individual consumers, where such data have been collected, traded or used as part of a commercial relationship (OECD, 2020, p. 7<sup>[6]</sup>).

## **Cross-platform network effects**

Cross-platform network effects (or network externalities) occur when the participation of users on at least one side of a platform generates network externalities on another side of the platform (OECD, 2019, p. 6<sup>[7]</sup>).

## **Data portability**

The ability (sometimes described as a right) of a natural or legal person to request that a data holder transfer to the person, or to a specific third party, data concerning that person in a structured, commonly used and machine-readable format on an ad-hoc or continuous basis (OECD, 2021, p. 9<sup>[8]</sup>).

### Digital economy

The Digital Economy incorporates all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services and data. It refers to all producers and consumers, including government, that are utilising these digital inputs in their economic activities (OECD, 2020, p. 5<sup>[9]</sup>).

### Digital markets

Markets within the digital economy, sometimes also referred to as digital platform markets.

### Disruptive innovations

Disruptive innovations have the potential to drastically alter markets and their functioning. They not only involve a new product or process, but can also involve the emergence of a new business model (OECD, 2017, p. 2<sup>[10]</sup>).

### Dual pricing policies

In the context of e-commerce, dual pricing involves a manufacturer charging different wholesale prices for products depending upon whether these are sold through offline or online sales channels (OECD, 2018, p. 21<sup>[11]</sup>).

### E-commerce

E-commerce is the sale of goods, services and digital content distribution over the internet to retail customers, as well as other activities such as online advertising (OECD, 2018, p. 2<sup>[11]</sup>).

### Envelopment

Envelopment refers to a strategy by a platform with dominance in one market to enter another platform market (whether the platforms are complements, substitutes, or unrelated) by bundling or tying the two platform products. As a result of network effects (from the dominant platform's existing user base) and economies of scope (due to shared technology and data), the competing platforms in the second market would be unable to compete (OECD, 2020, pp. 26-27<sup>[5]</sup>).

### Exclusionary abuses

Exclusionary abuses arise when a firm with market power uses certain strategies to push competitors out of the market in question and prevent new entry (OECD, 2020, p. 24<sup>[12]</sup>).

### Explicit collusion

Explicit collusion refers to anti-competitive conducts that are maintained with explicit agreements, whether they are written or oral. The most direct way for firms to achieve an explicit collusive outcome is to interact directly and agree on the optimal level of price or output (OECD, 2017, p. 19<sup>[13]</sup>).

### Exploitative abuses

Exploitative abuses refer to situations in which a firm uses its market power to impose unfair prices or other conditions on purchasers (OECD, 2020, p. 50<sup>[12]</sup>).



### Feedback loops

Feedback loops in digital markets are self-reinforcing processes in which a change to the conditions on one side of the market are amplified, due to data collection or network effects. For example, if an online platform uses data generated by its users' activities to improve its service, it will be able to increase consumer value and thus demand. It may also sell data to third parties, or use the data to better target advertisers, thus improving its revenues. Because these revenues can be invested in further improvements in service quality, demand may rise even further. Thus, an initial user base can generate a self-reinforcing cycle of improvements that cause the user base to increase further, continuing the cycle. This cycle is one of the reasons why concentration may be higher in digital platform markets (OECD, 2016, p. 10<sup>[14]</sup>; OECD, 2019<sup>[7]</sup>).

### FRAND

Fair, reasonable, and non-discriminatory terms. The concept is typically used as regards the licencing of standard essential patents, i.e. patents that standard setting organisations (SSOs) have accepted as being essential to the operation of technical standards. To prevent patent holders from exploiting the market power derived from owning a patent essential to the operation of a widely used technical standards, SSOs require members to make an ex ante commitment that if any technologies on which they hold patents or pending patents are included in the SSO's standard, they will license those technologies on FRAND terms. (OECD, Competition, Patents and Innovation II, 2009).

### GUPPI

Gross upward pricing pressure index, used to assess the potential for a post-merger firm to profitably increase prices due to a loss of competitive pressure. Unlike the UPP (upward pricing pressure test), the GUPPI does not take into account cost efficiencies generated by a merger (OECD, 2019, p. 22<sup>[15]</sup>).

### Hub-and-spoke arrangements

Hub-and-spoke arrangements are agreements between competitors in one market (the spokes) co-ordinated by vertically related intermediaries (the hub), mostly through information exchanges (OECD, 2019, p. 2<sup>[16]</sup>).

### Interoperability

Interoperability refers to the ability of different digital services to work together and communicate with one another (OECD, 2021, p. 12<sup>[17]</sup>).

### Line of business restrictions

Line of business restrictions (LOBRs) are antitrust remedies or regulatory restrictions that limit the activities that a firm can undertake (OECD, 2020, p. 4<sup>[18]</sup>).

### Monopsony power

Monopsony power is a situation where a firm has market power that allows it to determine the prices of an input it purchases. For example, in labour markets monopsony power allows the firm in question to restrict the quantity of labour that it purchases in order to reduce wages or lower the working conditions of its workers below competitive levels.

### Most-favoured nation clauses

Most-favoured nation clauses (MFNs) are clauses normally embedded in long-term contracts between two firms for the provision of intermediate goods or raw materials, whereby the supplier undertakes to apply to the buyer the best price conditions among those applied to any other buyer (OECD, 2019, p. 35<sup>[19]</sup>).

### Multi-homing

Multi-homing refers to the ability of users to use multiple competing platforms at the same time. This contrasts with single-homing, where consumers use only a single platform (OECD, 2019, p. 10<sup>[7]</sup>).

### Multi-sided markets

A market in which a firm acts as a platform and sells different products to different groups of consumers, while recognising that the demand from one group of customer depends on the demand from the other group(s) (OECD, 2018, p. 10<sup>[20]</sup>).

### Network effects

Network effects refer to the gains enjoyed by consumers of a product when more consumers use that product. For example, users of a social network experience a benefit, or positive externality, as more of their acquaintances set up accounts on the network (OECD, 2019, p. 6<sup>[7]</sup>). Network effects can occur within a given side of a platform, or between different sides (see *cross-platform network effects*).

### Platforms

Platforms are firms that provide different services to different groups of interconnected consumers (OECD, 2019, p. 6<sup>[7]</sup>).

### Platform markets

See “Multi-sided markets.”

### Product ecosystem

A line of products and services with a technological linkage increasing the complementarity between them (Bourreau, 2020, p. 3<sup>[21]</sup>).

### Resale price maintenance

Resale price maintenance (RPM) is a particular type of vertical agreement in which an upstream firm controls or restricts the price (or sometimes the terms and conditions) at which a downstream firm can on-sell its product or service, usually to final consumers (OECD, 2008, p. 2<sup>[22]</sup>).

### Selective distribution

Selective distribution refers to vertical arrangements by which a supplier defines minimum standards for admission to its distribution network, agreeing to supply all distributors which meet these requirements. In e-commerce markets, this can take the form of “internet addendums” which introduce more restrictive conditions for online sales (OECD, 2018, p. 17<sup>[1]</sup>).

### Single homing

See “Multi-homing.”

### SSNIP test

The small but significant non-transitory increase in price test.

### SSNDQ test

The small but significant non-transitory decrease in quality test.

## Tacit collusion

Tacit collusion refers to forms of co-ordination which can be achieved without any need for an explicit agreement, but which competitors are able to maintain by recognising their mutual interdependence. In a tacitly collusive context, the non-competitive outcome is achieved by each participant deciding its own profit-maximising strategy independently of its competitors. This typically occurs in transparent markets with few market players, where firms can benefit from their collective market power without entering in any explicit communication (OECD, 2017, p. 19<sub>[13]</sub>).

## Tying

Tying means that a firm requires its customers to purchase one or more “tied” products if they wish to purchase a “tying” product. It can be achieved through technical or contractual means. Bundling can be considered a form of tying, and occurs when a firm offers multiple products together in a single package. It can do so by either refusing to make the products available on a standalone basis, or offering the bundle at a discount (OECD, 2020, p. 2<sub>[23]</sub>).

## UPP

Upward pricing pressure test, used to assess the potential for a post-merger firm to profitably increase prices, taking into account the change in competitive pressures and the cost efficiencies generated by a merger (OECD, 2019, p. 22<sub>[15]</sub>).



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# 1

## Introduction

**D**igitalisation has reshaped competitive dynamics in the economy, creating new markets and transforming existing ones. This presents a multifaceted challenge for competition authorities. They must grapple with uncertainty in rapidly evolving markets, address new forms of misconduct, and examine markets whose precise boundaries are unclear. At the same time, mounting concerns about conduct in digital markets and indicators of growing market power have led to calls for new competition policy tools and the more active use of existing ones.

The OECD Competition Committee has explored a range of digital competition policy issues. This Handbook sets out the key messages from these discussions.

### What's different about competition in digital markets?

A starting point for analysing competition in digital markets, and assessing whether changes are needed to existing competition policy frameworks, is the identification of some key features of digital markets. These features, which shape competitive dynamics, can include:



**Multi-sided markets** where digital product acts as a platform, bringing different groups of consumers together. For example, a digital content platform may feature content creators on one side, viewers of content on another, and advertisers on another.



**Strong network effects** meaning that as the number of users grows, the value of the product to users increases. In the extreme, these network effects may lead to markets “tipping” into a monopoly.



**Substantial economies of scale and scope** since many digital markets exhibit high fixed costs and low or zero variable costs. Firms can therefore rapidly scale up, expand their geographic coverage, or potentially use their assets in one market to enter another.



**Reliance on large amounts of user data** that can be difficult to replicate and costly to analyse.



**Switching costs** for example users may have invested time and effort to create a profile on a social network or a reputation as providers on an exchange platform, which they may lose by switching.



**Often important intellectual property rights** including patents which grant the owner a limited-term monopoly over the use of a technology or method.



**Low or zero prices** associated with business models that earn revenue from the collection of consumer data, the sale of advertising or the use of customer relationships to sell “premium” or other paid products. These business models are of increasing importance: seven of the ten largest global companies provide zero price products and services in digital markets.



**Disruptive innovations** that dramatically reduce transaction and intermediary costs, and may be offered outside of regulatory frameworks that limit competition by incumbents.



**Vertically integrated and conglomerate business models** which may give rise to specific concerns about anti-competitive conduct. Digital platforms that act as “gatekeepers” between downstream firms and their customers may be the subject of competition concerns if they provide advantages to their own downstream operations. Further, firms may seek to leverage their market power from one market into another, for example with bundling and tying strategies that foreclose competition for a digital “ecosystem” of products.

While some of these characteristics, such as network effects or zero price business models, are not new, they are taking on a new prominence in digital markets, with significant consequences for market dynamics. In particular, they may give rise to concentrated markets, and the emergence of large digital conglomerates present in a range of markets. They may also cause “competition for the market” dynamics, in which firms compete to become the single dominant firm within a market.

## What is the role of competition policy in digital markets?

The innovations brought by digitalisation have generated substantial consumer benefits in many markets, including lower prices, greater accessibility and convenience, more variety, and new products. At the same time, several concerns have been identified with respect to competition in many digital markets, in terms of market structure, the conduct of firms, and merger activity in the

sector. Each of these concerns points to declining competition intensity, demonstrated by increasing mark-ups, falling entry rates (especially in digital-intensive sectors), and growing concentration (see, for instance, Bajgar et al. (2019<sup>[24]</sup>), Calvino and Criscuolo (2019<sup>[25]</sup>)), as a symptom of the problem.

In general, competition policy focuses on cases where market power is durable, rather than a temporary reward for innovation that can be contested by a competitor with novel technologies. Concerns about the competition impacts of durable market power could be particularly pronounced when:

- ➔ **A dominant firm behaves anti-competitively**, for example using its position to exclude competitors from a market, or acquiring potential emerging competitors simply to prevent their products from reaching the market
- ➔ **Competition is distorted by regulation** that allows incumbent firms to maintain a dominant position for reasons unrelated to the attractiveness of its products to consumers
- ➔ **Features of demand or supply prevent entry by new firms, or expansion by dominant firms' competitors**, including very strong network effects or economies of scale and scope, information asymmetries between firms and consumers, switching costs, or consumer behavioural biases (such as framing bias - being influenced by the way different options are presented -, salience bias - focusing on the most prominent choice item -, and default bias - a low tendency to switch to unambiguously better offers)

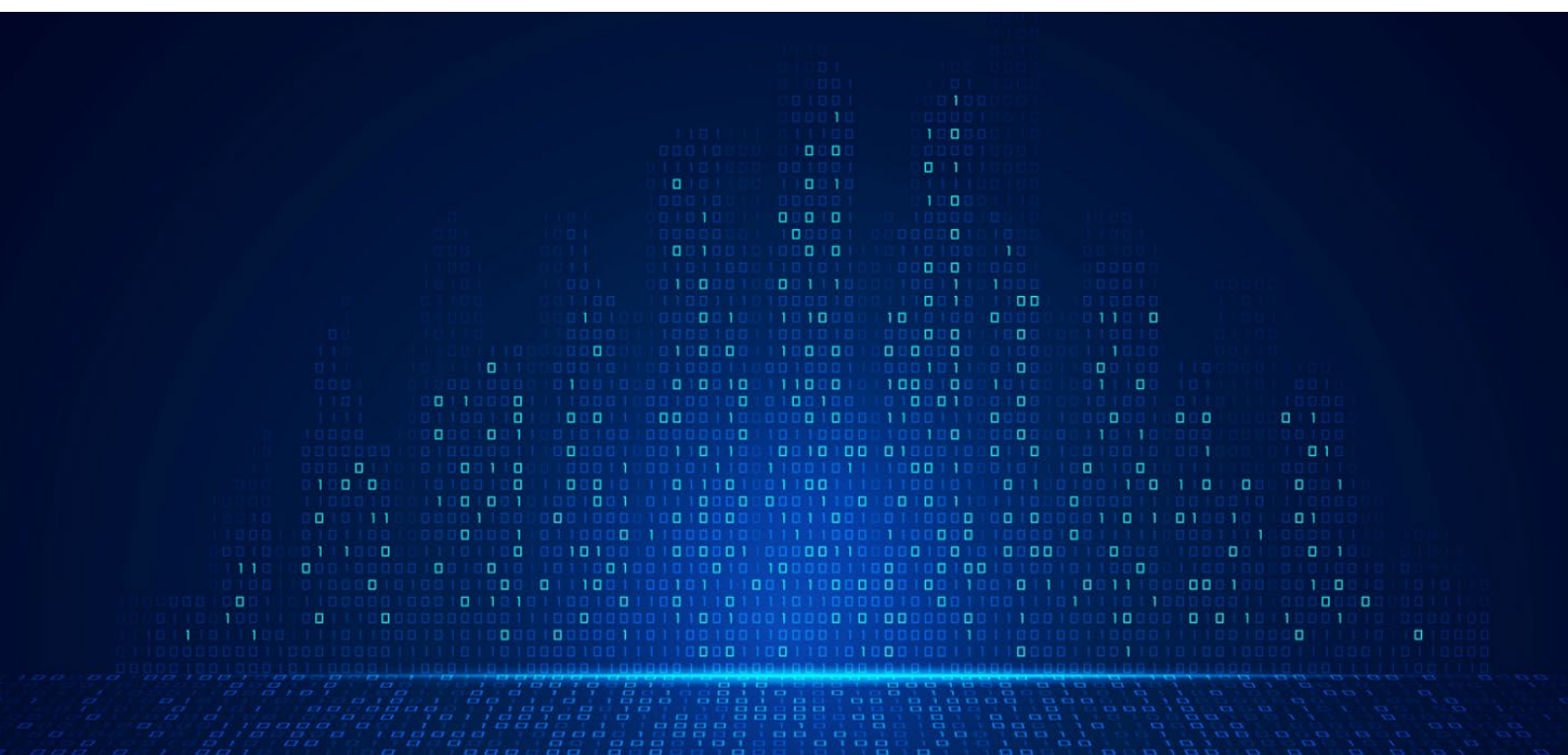
Some concerns about dynamics in digital markets fall squarely within a competition enforcement context, namely with respect to anti-competitive conduct and mergers giving rise to durable market power. However, competition authorities will need to adapt their analytical tools to the unique conditions of digital markets, including multi-sidedness and business models involving a price of zero. They may also need to grapple with new theories of harm that may not fall within established frameworks, and which will require legislative or at least analytical changes to apply. Further, they must adapt their processes, to match the speed of evolution in digital markets and ensure that potentially anti-competitive conduct is scrutinised.

Other concerns in digital markets cannot be addressed by competition authorities, or at least not directly. The size and reach of large digital firms across multiple markets has led some to highlight the potential for systemic risks, rent-seeking (for example, through lobbying activities) and inequality. While vigorous competition in markets can mitigate each of these risks, competition enforcement and competition policy more broadly may not be equipped to tackle them head-on.



Many concerns fall within a grey zone between these two categories – in other words, it is not always clear what can be addressed by competition enforcement, and what cannot. Competition authorities have begun to explore issues ranging from labour market power by large firms, to consumer privacy. These efforts include both enforcement work, as well as broader competition policy and advocacy efforts. Going forward, competition authorities will need to identify the boundaries of competition enforcement, and clarify where other regulators, such as consumer protection authorities, will be better-suited to address an issue. A range of proposals have also been made for new digital regulators to be established. These regulators could promote competition outside traditional competition enforcement frameworks, and pursue additional policy objectives, acting essentially as a sectoral regulator. Even where competition authorities may not be involved in enforcing these new regulations, however, they have a role to play in advocating for procompetitive regulatory design.

There is, therefore, a great deal of work to be done to address competition concerns in digital markets, and to ensure that current regulatory frameworks are up to the task. This Handbook, based on the collective insights of the OECD Competition Committee, can help identify the way forward.



# 2

## Understanding digital market dynamics

The market characteristics, business models and competitive dynamics in digital markets are longstanding themes of the Competition Committee's work, beginning with a roundtable on e-commerce as far back as 2000. Understanding these features, and how they differ from other markets, is essential for effective competition enforcement and competition policy more broadly. Some key messages that have emerged from Competition Committee discussions in this area are:

- **Digital markets exhibit a range of characteristics that may lead to concentration, market power, and winner-takes-most dynamics**, including network effects, consumer lock-in, and economies of scale and scope, among others.
- **Concentration (or share of revenue) statistics must be interpreted with caution in a competition context.** In particular, measures of sector concentration may give misleading indications about the intensity of competitive conditions in markets, although they may be relevant to other policy issues such as systemic risk and lobbying power. That being said, a range of other indicators, including mark-ups, suggest that durable market power is on the rise in digital markets.
- **The markets for many digital products are multi-sided.** Digital platforms, like any other multi-sided market, feature cross-platform network effects, which mean that a firm's decisions in one side of a market, for example on pricing, affect demand on another. These network effects can lead to market power and amplify the impacts of anti-competitive conduct, but they may also make generate significant consumer benefits, for example by enabling cross-subsidisation. Advertising plays a particularly important role in many of these multi-sided digital markets, especially when services are provided to consumers free of charge, as is often the case for search engines and social networks.
- **Many digital business models involve some degree of vertical integration and conglomerate structures.**
  - A particular focus of recent competition policy discussions regarding vertical integration is the gatekeeper position of some digital platforms. This refers to the position that digital platforms have when firms rely on them for access to consumers, and may give rise to complaints of anti-competitive conduct (for example if the platform also competes downstream in the marketplace it operates).

- Conglomerate business models also play a significant role in digital markets, given the rise of digital ecosystems of interconnected products. These competitive dynamics in these ecosystems will depend on their degree of openness to third parties and the potential for competition among ecosystems. Where intra-ecosystem network effects are sufficiently strong, there is a risk that the core platform and related markets will tip into a monopoly position.
- **Data are a central element many digital markets, as a competitive asset, potential entry barrier, and even dimension of quality.** They have also led to new markets, and enabled new business models as well as strategies, such as personalised pricing.
- **The demand-side characteristics of a market can play a crucial role in competitive dynamics, and should be incorporated into competition analysis.** Particular considerations that may be warranted in digital markets are those related to zero-priced products, search and switching costs, and choice and information overload. These characteristics may be incorporated into firms' strategies and could contribute to further entrenching market power.



# Key insights from OECD work on digital market dynamics

## The Digital Economy (2012)

**Competition in digital markets can feature “winner takes most” dynamics** associated with competition for the market, meaning dominance can be the virtually inevitable outcome of success. Strong network effects and economies of scale reinforce these dynamics. It is unclear whether such dominance will be cyclical and transient, and whether dynamic competition could in the future allow the displacement of dominant incumbents. Big may not automatically be bad, as long as new entry is possible, incentives to innovate are preserved, and incumbents seek to maintain their positions by developing new products.

- Network effects are procompetitive insofar as they improve the quality and value of a product for both its users and other groups. However, network effects can have a detrimental impact on competition where they raise barriers to entry or increase switching costs. This may result in lock-in of users to a particular platform and/or lead to a tipping point where a single platform emerges as dominant.

**Competition law plays an essential role in ensuring dynamic competition as digital markets mature**, in particular in stopping and deterring anti-competitive behaviour or mergers that would harm such dynamic competition.

- The optimal timing of competition law interventions in digital markets may be complex, as it can be difficult to determine the point at which a firm may be considered dominant for competition law enforcement purposes.
- Authorities will require knowledge and expertise in digital markets, although it may be challenging to ensure this knowledge remains up to date in fast-moving markets.
- Because many markets in the digital economy are international in geographic scope, there can be jurisdictional or territorial challenges. For example, it may be difficult to identify within a given country a physical entity that is legally representative of the party responsible for the anti-competitive behaviour. Further, an anti-competitive practice may affect several jurisdictions, making international co-ordination and co-operation among authorities crucial.

**Competition in the mobile communications sector is increasingly taking place at the level of entire technology eco-systems** comprising a platform and bundled product offerings. Although this development raises barriers to entry because new entrants must now compete in two or more markets from the outset, there remains the potential for vigorous competition between ecosystems.



**Interoperability allows different platforms and applications produced by different developers to connect and communicate, thereby increasing value for users.**

- At present, interoperability is facilitated mainly through voluntary disclosures by single firms and industry-wide standardisation. Because interoperability increases the attractiveness of a product for consumers, developers have incentives to co-operate, especially for new products that need a foothold in the market. In the context of established platforms, however, the incentives of the platform owner may shift away from interoperability due to a desire to protect a downstream subsidiary or eliminate a potentially competing platform.
- Voluntary disclosure of a product's application programming interface (API) is a common method by which firms enable interoperability. Voluntary disclosure can facilitate rapid innovation; however, it is not clear that the refusal to supply principles of competition law can be used to force a reluctant dominant firm to disclose interoperability information.
- Standardisation of technology is an alternative way to promote interoperability in the digital economy. When standards are well-designed, meet a genuine need, and are widely adopted, they also function as an innovation catalyst. However, for standardisation to be successful, it should be open and transparent, be well-designed, meet a genuine need, be licensable under FRAND terms, and be implemented widely. Further, standardisation may pose competition risks by discouraging product differentiation.
- The strategic accumulation of digital patents and potential hold-up through patent litigation has been a significant concern in the digital economy.

🌐 More resources: <https://www.oecd.org/daf/competition/The-Digital-Economy-2012.pdf>

## Implications of E-commerce for Competition Policy (2018)

**Internet shopping greatly expands consumer choice, both by increasing the range of retail outlets that consumers can access, and by increasing the amount of information available, thus reducing search costs.** Online retail platforms may also perform a variety of functions and derive income from many different sources. This may include direct retail sales, provision of intermediation services to other online retailers, monetisation of consumers' "eyeballs" for advertisers and accumulation of valuable consumer data.

📖 [Background note](#) ▷ || [Videos](#) 🌐 More resources: [www.oecd.org/competition/e-commerce-implications-for-competition-policy.htm](http://www.oecd.org/competition/e-commerce-implications-for-competition-policy.htm)





## Market Concentration (2018)

**Recent statistics suggest that concentration is on the rise in several sectors and countries. However, caution is warranted when making inferences about market competition based on these statistics.**

- Market concentration is not a perfect indicator of market power or competitive intensity, which is what matters for consumers. In particular, the use of market concentration as an indicator can be misleading. A concentrated market need not necessarily be an uncompetitive one: it may be the result of intense competition leading to innovation or low prices, allowing a small number of firms to build volume and forcing less efficient firms out of the market. The opposite may also be true – concentration statistics based on poorly-defined markets may conceal market power. Thus, it is necessary to look at other indicators of competitive intensity.
- Industry or sector-level concentration statistics cannot substitute for market concentration statistics, and may provide little insight about competitive intensity. In particular, sector concentration statistics may suggest increases in market concentration where there are none, and where market concentration has in fact declined. However, sector concentration can help identify changes in industry structure, for example the changing roles of SMEs.

**Other indicators of market power that are easier to calculate than average market concentration, and more meaningful than industry concentration measures, have also pointed to rising market power. These include estimates of price mark-ups, profitability measures, output, and rates of entry and exit.** These indicators do not rely on market definition, and so they can be collected without first defining relevant markets, or relying on administrative industry classifications. While they each have their own measurement challenges, they collectively offer a more promising route for policymakers looking for insights on broad trends in market power.

**The causes of increasing market power, whether digitalisation, anti-competitive regulations, demand-side problems, anti-competitive behaviour, or a combination thereof, remain unclear. Thus, dramatic reform of competition law and policy to focus on market structure would be a mistake.** However, increasing mark ups call for increased vigilance and further action, including consideration about the balance of over- and under-enforcement risks, ex-post evaluations of authority decisions, considering stronger presumptions, and using market studies to gain a holistic view of competition problems in a market.

📖 [Issues paper](#) > || 📺 [Videos](#) 🌐 More resources: [www.oecd.org/competition/market-concentration.htm](http://www.oecd.org/competition/market-concentration.htm)

## Abuse of Dominance in Digital Markets (2020)

**Many digital markets exhibit characteristics that could lead to durable market power.** Strong network effects can strengthen the position of incumbents, lock in consumers, and make it difficult for new entrants to gain a foothold in markets. Consumers may face significant switching costs, and many digital products involve strong economies of scale and scope. Demand-side behaviours in digital markets (such as a tendency to favour defaults) may also, either on their own or when capitalised on by incumbents, exacerbate the situation and limit competitive pressures in a market. When sufficiently strong, these characteristics could make a market vulnerable to tipping towards a single dominant firm with a durable position.

**Competition analysis must be adapted to the unique conditions in digital markets.** In particular, assessments of dominance and market power cannot rely solely on market shares, given the importance of dynamic competition in digital markets, as well as multi-sided business models for which a single market share will not be informative. Rather, assessments should be made in terms of substitutability and entry barriers (including network effects).

 [Background note](#) >  [Videos](#)  More resources: [www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm](http://www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm)



## Rethinking Antitrust Tools for Multi-sided Platforms (2018)

**One of the defining characteristics of a platform is that it provides different services to different groups of interconnected consumers. This interrelationship comes from the fact that the participation of users on at least one side of the platform generates network externalities on another side of the platform – something referred to in economics as a cross-platform network externality.** When these externalities exist, the demand on one side of the platform will depend on the participation on another side of the platform. For example, as the number of viewers of an online video content platform increases, the value to advertisers of using that platform also increases – in other words, viewers generate a positive cross-platform externality for advertisers. In some cases, this externality can also be negative. In the same video content platform example, users may find the value they obtain from the platform declines as more advertisers use it.

**Because of the dynamics generated by network effects, feedback loops may also be observed in digital platform markets. This means that a change to the conditions on one side of the market may be amplified as a result of network.** A drop in demand on one side of the market can cause demand on the other side to fall if the network effects shrink, which can cause a further decrease in demand on the side of the market from which the effect originated. As a result, markets with strong platform externalities may be relatively more concentrated, the success of firms can be self-perpetuating, while small firms may find it difficult to generate enough value for consumers. Some firms identify network externalities as an efficiency justification for mergers or other conduct that may give rise to competition concerns.

 [Publication](#)  More resources [www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm](http://www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm)





## Competition Economics of Digital Ecosystems (2020)

**Digital product ecosystems bring together a broad range of products, often centred around a multi-sided platform.** The combination of multiple products within a product ecosystem can generate significant economies of scope as well as user benefits (e.g. from convenience and interoperability of products), but it also means that the impact of “tipping” into monopoly can be felt across numerous markets.

- Competitive dynamics within product ecosystems may be complex. On the one hand, an ecosystem may wish to promote the development of new complement products from third parties in order to increase the attractiveness of the ecosystem to users. On the other hand, the ecosystem may seek to gain by maintaining control and earning revenues in markets for complementary products or to neutralise the threat to their core business from producers of complement products. Thus, firms specialising in only one part of the ecosystem may be vulnerable to leveraging strategies (such as bundling) by the firm controlling the core platform in an ecosystem.
- Large digital ecosystems may engage in oligopolistic competition, vying aggressively for consumers that may be “locked in” to the ecosystem for some time once they make their selection (e.g. when consumers purchase a device they are likely to keep for some time, and are thus locked in to a specific ecosystem). On the other hand, conditions may also be ripe for tacit co-ordination in the form of market sharing, particularly when barriers to entry and expansion limit the likelihood of disruptive innovation and entry. Competitive outcomes may be more likely when there are several similar ecosystems competing with one another, as opposed to a single dominant ecosystem facing many smaller players offering standalone products.

▷ II [Videos](#) 🌐 More resources: [www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm](http://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm)





## Big Data (2016)

**The increasing use of consumer data for commercial purposes has generated substantial gains, allowing businesses to come up with product innovations, improve the efficiency of productive processes, forecast market trends, improve decision-making and enhance consumer segmentation.** Many of these gains are passed on to consumers, who are offered new products and services and realise a wide range of benefits such as innovative, customised and continually enhanced services often provided free of monetary charge.

**The ability to generate and process large datasets can nevertheless be associated with market power, as a result of economies of scale, economies of scope and network effects, as well as real-time data feedback loops. However, these effects may not necessarily lead to dominance or market tipping.**

- For example, if an online platform uses data generated by its users' activities to improve its service, it will be able to increase consumer value and thus demand. It may also sell data to third parties, or use the data to better target advertisers, thus improving its revenues. Because these revenues can be invested in further improvements in service quality, demand may rise even further. Thus, an initial user base can generate a self-reinforcing cycle of improvements that cause the user base to increase further, continuing the cycle. This cycle is one of the reasons why concentration may be higher in digital platform markets.

 [Background Note](#) >  [Video](#)  More resources: [www.oecd.org/competition/big-data-bringing-competition-policy-to-the-digital-era.htm](http://www.oecd.org/competition/big-data-bringing-competition-policy-to-the-digital-era.htm)

## Consumer Data Rights and Competition (2020)

**Businesses use consumer data for a variety of purposes. For example, businesses can use consumer data to improve or personalise products, or sell it to third parties. Consumer data are also a key input for targeted digital advertising, which is one of the main sources of revenue for many of the larger online platforms across the globe today. Further, the analysis of consumer data by artificial intelligence (AI) systems can produce new predictions and uncover new insights in a range of markets.**

 [Background Note](#) >  [Videos](#)  More resources: [www.oecd.org/daf/competition/consumer-data-rights-and-competition.htm](http://www.oecd.org/daf/competition/consumer-data-rights-and-competition.htm)

## Competition in Digital Advertising Markets (2020)

**Digital advertising is of increasing importance and policy relevance across the globe. The ability to target advertisements to individual consumers in real time differentiates digital advertising from other forms of advertising.**

- Global digital advertising revenue exceeded USD 330 billion in 2020 and in many countries, digital advertising revenue now exceeds that for all other forms of advertising. Digital advertising is also important from a policy perspective, as it funds a wide array of zero-priced products and services available online. It is the main revenue source for many of today's largest global platforms
- The ability to target digital advertising to individual consumers in real time is one of the key attractions of digital advertising to advertisers when compared with other forms of advertising. Where information exists for an advertiser to target an ad, this greatly increases the value of the ad: advertisers will pay more, and they expect to achieve a greater click through rate, and ultimately, revenue, from such ads.

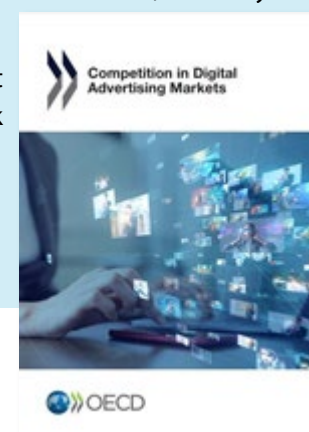
**Consumer data is a key input into targeted digital advertising, and access to such data is important to being able to attract higher advertising prices.**

- Access to recent consumer data is required for behavioural advertising (that is, targeted advertising), especially for digital display advertising. In general, when an advertiser can access information about the consumer that will be viewing the ad (and when the consumer is in the advertiser's target audience), the advertiser will bid much more for that advertising space. This means that intermediaries with access to this information stand to make much higher margins than those without this information. It also highlights the importance of intermediaries on either side of the transaction (i.e. on the buyer side and on the seller side) being able to share this type of information.
- To the extent that a provider of digital advertising services has access to consumer data from other parts of its business (i.e. from other consumer-facing services) those providers may have an advantage in respect of behavioural advertising, and consequently, advertising revenues. Where such data cannot realistically be collected or bought through other means, this may amount to a barrier to entry in relation to digital advertising services.

Market studies in digital advertising markets are identifying concerns about market power, instances of potentially anti-competitive conduct, and a lack of transparency.

 [Background Note](#) ▷  [Videos](#)



 More resources: [www.oecd.org/daf/competition/competition-in-digital-advertising-markets.htm](http://www.oecd.org/daf/competition/competition-in-digital-advertising-markets.htm)



## Consumer-facing Remedies (2018)

**While competition authorities often focus their efforts on ensuring that the supply side of a market is functioning competitively, significant problems may also emerge on the demand side. These problems, which have been observed in digital markets, limit the ability of consumers to access information on a product, assess the information, or act on the information. They may stem from:**




- **Search costs**, namely the time, effort, and money required to obtain product information and compare different options.
- **Behavioural biases or contextual factors** that give rise to demand-side concerns. These biases include a tendency to favour payoffs in the present, and sensitivity to how choices are framed. Consumers may prefer to maintain the status quo even if they could benefit from other options, due to loss aversion and “choice overload.” Thus, the costs and complexity of switching decisions could mean that doing nothing is a rational response for consumers, something competition authorities must recognise, rather than assuming irrational consumers are the source of the problem.
- **Efforts by suppliers to exploit underlying demand-side problems in a market to their benefit.** For instance, suppliers may seek to increase search and switching costs, either by making the information available to consumers more complicated, by limiting comparability with competitors, or by imposing costs on consumers switching suppliers.

 [Background Note](#) > || [Videos](#)  More resources: [www.oecd.org/competition/consumer-facing-remedies.htm](http://www.oecd.org/competition/consumer-facing-remedies.htm)

## Blockchain and Competition Policy (2018)

**Blockchain is a general-purpose technology that threatens to disrupt markets and institutions across the world. It authenticates the ownership of assets, makes them unique and traceable, and facilitates the digital transfer and hence trading of assets by providing trust in transactions through reduced uncertainty.**

- While the most popular applications of blockchain have thus far been in the financial sector, the technology may become relevant to numerous other sectors, including legal services, notaries, data storage, energy and transport. Indeed it is already being used to improve global supply chains, and pilots are underway on its ability to authenticate the ownership of intellectual property rights, land rights, identity data, health records, online votes, pollution certificates, search query data, stock, pensions, insurance schemes and many other assets.

 [Issues paper](#)  [Publication](#) > || [Videos](#)  More resources : [www.oecd.org/competition/blockchain-and-competition-policy.htm](http://www.oecd.org/competition/blockchain-and-competition-policy.htm)





## Personalised Pricing (2018)

**Personalised pricing refers to the practice of price discriminating consumers based on their personal characteristics and conduct, resulting in prices being set as a function of consumers' willingness-to-pay. Under personalised pricing, businesses segment customers into small groups of individuals, charging each a share of an estimated value of their willingness-to-pay. It is important to distinguish personalised pricing from other price strategies that involve no discrimination, such as dynamic pricing.**

- For personalised pricing to occur, three fundamental conditions must be satisfied: (i) businesses must be able to measure consumers' willingness-to-pay; (ii) businesses must create a mechanism to prevent arbitrage; and (iii) businesses must have some element of market power. Although these conditions are satisfied in several digital markets, and there are anecdotal cases of consumers receiving personalised offers online, existing evidence of personalised pricing is still relatively limited.

**Personalised pricing has generally positive effects on efficiency, but an ambiguous effect on the distribution of surplus between firms and consumers. Whether personalised pricing benefits or harms consumers depends on the particular characteristics of the market.**


- Personalised pricing has more complex and ambiguous redistribution effects, typically leaving some individuals better off and others worse off. First, personalised pricing generally transfers surplus from consumers with a high willingness-to-pay, who are charged higher prices, to consumers with a low willingness-to-pay, who benefit from lower prices. Second, personalised pricing also affects the distribution of surplus among businesses and consumers, depending on the competitive conditions of the market. In particular, consumer welfare is likely to drop in monopolised markets, but is more likely to increase in relatively competitive markets, where personalised pricing reduces the risk of collusion and may encourage firms to compete more aggressively for each individual customer.

 [Background Note](#) >  [Videos](#)  More resources: [www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm](http://www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm)

## Competition in Labour Markets (2019)

Multi-sided digital platforms can develop significant intermediation power in labour markets, which may be reinforced by strong cross-platform network externalities.

- **Some platform workers may have commonalities with both employees and self-employed contractors.** The distinction may have implications for competition enforcement. Platform workers considered to be self-employed may, for instance, be unable to benefit from competition law exemptions for collective bargaining.

 [Background note](#) >  [Videos](#)  More resources: [www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm](http://www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm)



# 3

## Adapting analytical tools to digital markets

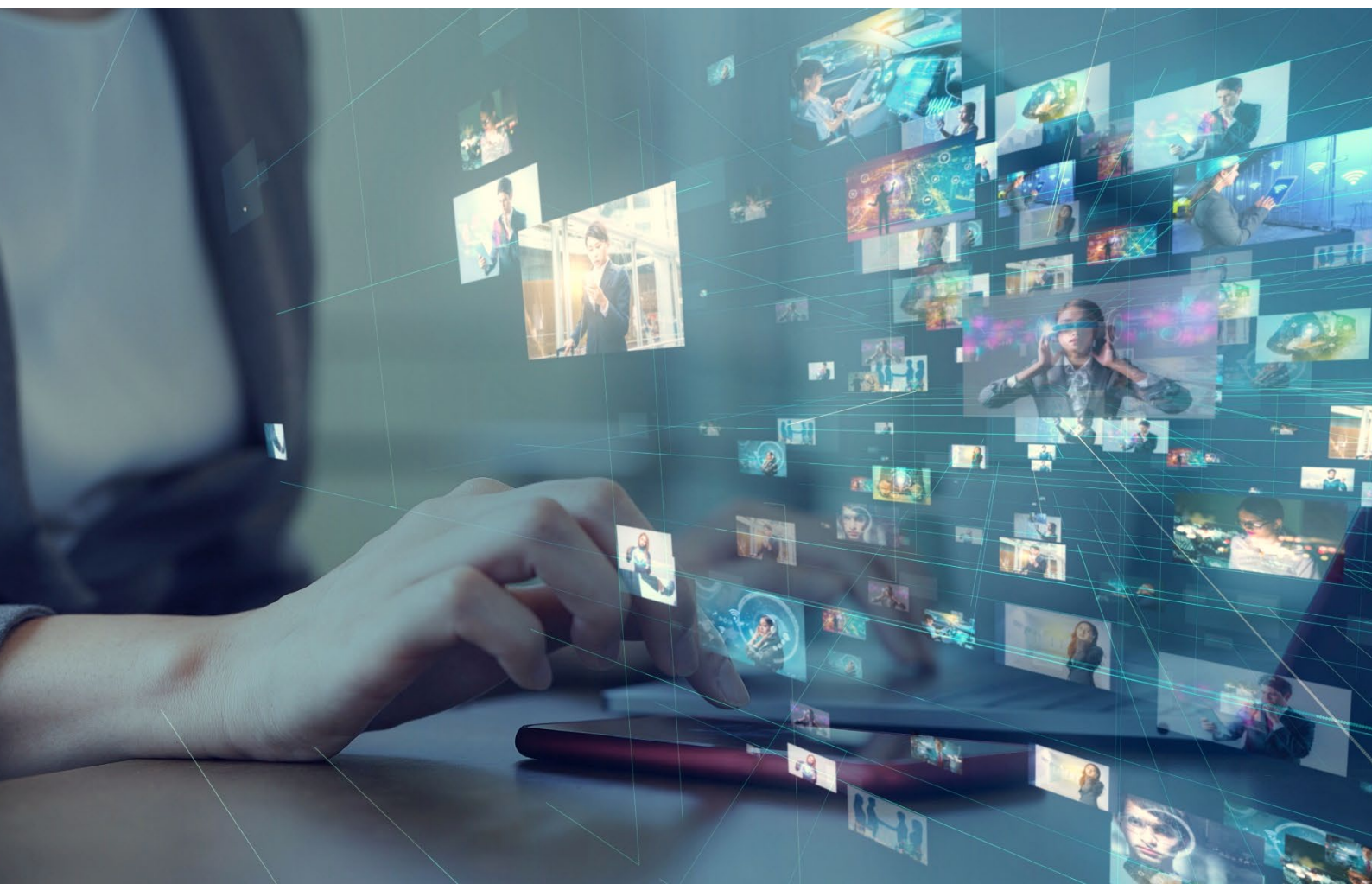
**T**he characteristics of digital markets can make analysis challenging for competition authorities. Although the fundamental economic logic of standard competition analysis remains valid, the way in which analytical tools are applied must be adapted. For example, a hypothetical monopolist test remains a valid and useful framework for defining markets and identifying the competitive environment around a firm in digital markets. However, a standard SSNIP methodology will not work for digital multi-sided markets with different groups of consumers that have interrelated demand, monetary prices of zero, and rapid product change due to innovation.

These characteristics are not necessarily new – most competition authorities have experience conducting assessments in multi-sided markets, for example. However, the frequency with which these characteristics arise in digital markets, and their centrality in shaping market dynamics, calls for a careful examination of the methodology and assumptions embedded in established analytical tools.

OECD work has explored several areas where analysis must be adapted to digital markets, namely:

- **Network effects:** Competition analysis in digital markets should include an assessment of the importance of network effects. These effects can generate significant benefits for consumers and may be a source of potential efficiencies, but on the other hand could constitute an entry barrier that makes markets less contestable. In some situations, network effects may be sufficiently important to create a risk of tipping into monopolies, such as when network effects and associated data collection give rise to self-reinforcing feedback loops.
- **Multi-sided platform markets:** The relationship between different sides of a platform gives rise to cross-platform network externalities, the term used to refer to the advantages obtained on one side from an increase in participation on the other side of a market. For example, consumers using an online marketplace benefit when more sellers offer their services, and similarly sellers benefit when more consumers use the platform. Competition analysis must take into account these externalities when they play a determinative role in the market (e.g. in terms of price structure), since failing to do so will lead to erroneous conclusions about the responsiveness of demand. For instance, SSNIP tests must be modified to take into account the relationship between demand on different sides of the platform during the market definition process. Further, the assessment of market power will also need to be adapted, potentially using adjusted Lerner indices.

- **Rapid change in the competitive landscape:** Analysis rooted in defined digital markets will need to be interpreted with caution, given that many digital markets exhibit rapid change. Further, the boundaries of product markets may be blurred – even if products are not perfect functional substitutes, for example, do they still directly compete for consumer time, attention and data? Competition analysis must also grapple with the potential entry of new competitors in a market, and new product development pipelines. To do so, they may need to consider the innovation capacity of firms, which may provide a different picture from current product markets (existing competitors may undertake limited innovation, and there may be the threat of entry from innovators in related markets).
- **Non-price competition:** Many digital markets feature important dimensions of non-price competition, and thus analysis focused on prices (for example when measuring the responsiveness of demand) may not present a complete picture – especially when consumers are currently obtaining products at a price of zero. Competition analysis is needed to both uncover the relevant non-price dimensions of competition and assess the potential impact of the conduct or merger on these dimensions.
- **Broad geographic market definition:** Digital markets may be notionally borderless, but analysis will be needed to uncover limitations to the geographic scope of markets (such as regulatory or linguistic limitations).





# Key insights from OECD work on the adaptation of analytical tools to digital markets

## Rethinking Antitrust Tools for Multi-sided Platforms (2018)

**Multi-sidedness should be incorporated into competition analysis** when cross-platform network externalities: (1) play an important role in shaping firm and consumer decisions in the market and (2) will be directly affected by the merger or conduct at issue. In other words, the decision whether to use analytical tools adjusted for platforms should not be automatic as soon as it has determined that there are multiple groups of consumers with interrelated demand.

**Competition harm associated with anti-competitive conduct or mergers may be amplified in multi-sided markets** due to the existence of feedback loops and strong network effects.

**The decision of whether to define a single or multiple interrelated platform markets will not affect the economic logic of competition analysis, but it may have practical implications for cases.** In particular, defining separate markets may limit the ability to recognise efficiencies accruing on only one side of the market. Thus, competition authorities may need to take into account the nature of the market when making this decision. For example, simple transaction or matching platforms may provide a similar service to both sides and thus it may be reasonable to define a single market, as opposed to platforms for which only one side benefits from a positive externality (such as advertising, where separate markets may be more appropriate).



**When multi-sidedness plays an important role in market dynamics, market definition tools need to be adapted.** In particular, the hypothetical monopolist framework remains relevant, but analytical tools will need to capture the responsiveness of different sides of the platform to changes on another side. Thus, SSNIP tests will need to be conducted with multiple iterations (estimating the initial impact of a price increase, then the reaction on other sides of the market, then the rebalancing on the side subject to the initial increase), and on each side. If these reactions are not factored in, there is a risk of an overbroad market definition.

**Similarly, analyses of market power must also capture the relationship between different sides of a platform.** It is not possible to have market power on only one side of a platform. As a result, tools assessing the responsiveness of demand must capture elasticities and diversion ratios on all sides, including responses on one side of a platform to a change in participation on other sides.

- Market surveys must capture responsiveness to changes on other sides of a market.
- Adjusted UPP and GUPPI tests can be used, and when data availability is more limited, an adjusted Lerner index can be calculated using only profits, fixed costs and revenues.

- Market share and concentration measures may be less meaningful in platform markets because they do not capture relationships across platforms, and a single measure may not capture all sides of the platform.
- However, the durability of profitability and market shares may still provide a helpful indication of potential market power.
- Consumer homing patterns (single versus multi-homing) are useful for understanding market dynamics but are not determinative of market power.

**Multi-sided platforms may be particularly vulnerable to exclusionary conduct and harm associated with vertical restraints.** A case-by-case analysis will be needed to establish harm, as with any other market, with some adaptations to analytical tools.

- Exclusivity agreements may be relatively more risky in multi-sided markets given that they may affect sides of the market not included in the agreement. A raising rivals' cost framework, followed by an assessment of the effect on competitive intensity, remains valid in a multi-sided context.
- Incentives to engage in predatory pricing strategies may be stronger given the potential gains from cross-platform externalities. However, simple price-cost tests will not be valid, since below-cost pricing on one side of the market may simply be a way of internalising cross-platform externalities (in particular, the beneficiaries of these externalities may subsidise participation on the other side of the market). Further, tests focused on assessing whether the prices would harm an "as-efficient competitor" may fail to capture anti-competitive conduct harming nascent firms still developing sufficient scale for network effects. Instead, the assessment of predatory pricing in multi-sided platform markets should ask whether the conduct is only profitable because it weakens competitors, as opposed to building up a user base. Authorities can assess whether the price would have been profitable without weakening rivals by estimating diversion ratios and removing substitution effects from an estimate of a firm's optimal pricing function.
- While vertical restraints may generate greater harm in platform markets due to feedback loops, there may be situations in which these restraints can be justified in order to prevent free-riding from cross-platform network effects.

**The scope for merger efficiencies may be broader in multi-sided platform markets.** For instance, mergers may serve to beneficially combine user bases and increase the interoperability of services. However, platform efficiency claims will need to continue to be scrutinised as in any other market. In particular, it may not be clear that a merger is required to achieve these gains, as opposed to agreements to enable interoperability and the use of shared standards.

- Event studies may be useful in scrutinising efficiency claims, for instance to assess whether past increases in scale generated significant efficiencies for users.
- To assess merger effects with simulation tools, an estimate of the value of cross-platform network effects will be needed.
- In terms of economic analysis, it may be easier on a practical level to consider both efficiencies and competition harms together.

 [Publication !\[\]\(18065afa4ef6662bca9f3f6088f7de30\_img.jpg\) www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm](https://www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm)

## Practical Approaches to Assessing Digital Markets for Competition Law Enforcement (2019)

**Authorities may need to focus on particular types of evidence when seeking to understand online platform market dynamics.**

- Relevant evidence for assessing the strength of cross-platform network effects can include surveys or customer interviews, event studies (to evaluate how participation on the platform changes in response to changes on one side), internal firm documents (explaining interactions between the sides), and industry expert reports.
- With respect to market definition, internal firm documents prepared prior to the commencement of the investigation or merger negotiations (e.g. executive presentations, emails regarding competitive positioning and strategic plans) can also be helpful in understanding how the firms viewed the competitive landscape and potential competitive threats or in shedding light on the rationale of a transaction. Firms may also hold analysis that could be repurposed for market definition purposes, such as consumer surveys.
- Qualitative evidence may be particularly important for market definition and assessing market power in digital markets, given the importance of non-price competition.

 [Background Note](#)  More resources: [www.oecd.org/competition/latinamerica/2019-latin-american-and-caribbean-competition-forum.htm](http://www.oecd.org/competition/latinamerica/2019-latin-american-and-caribbean-competition-forum.htm)

## Big Data (2016)

**The ability to generate and process large datasets can be associated with market power and should be considered as part of the competitive analysis.**

- A first approach to incorporate Big Data into competition law enforcement is to treat data as an input or asset that companies may use to enhance their market power and engage in exclusionary practices.
- A second approach for competition authorities is to consider the impacts of Big Data on quality dimensions of competition. Data analytics may have implications for several dimensions of quality competition. On the one hand, the knowledge extracted from data allows companies to offer innovative and customised products. On the other hand, excessive collection of data and misuse of personal information may harm consumer interests, including privacy, data protection, freedom of speech, consumer choice and non-discrimination rights. While quality may be an important aspect of competition policy, not all product characteristics are necessarily relevant for consumers or directly affected by the process of competition.

 [Background Note](#)  [Video](#)  More resources: [www.oecd.org/competition/big-data-bringing-competition-policy-to-the-digital-era.htm](http://www.oecd.org/competition/big-data-bringing-competition-policy-to-the-digital-era.htm)

## Implications of E-commerce for Competition Policy (2018)

**The dynamics of the online retail sector are often complex and differ significantly in several dimensions from the brick-and-mortar world.**

- When assessing the competition law implications of behaviour in this environment, it is important both to understand how the underlying business models work, and to consider the business rationale for allegedly anti-competitive conduct.
- In the e-commerce sector, the task of market definition is particularly complex, requiring competition authorities to consider: (i) the relationship between offline and online retail channels; (ii) the multi-sided nature of large online platforms benefiting from multiple interdependent sources of demand; and (iii) the likelihood of future competition.
- However, in the e-commerce context, competition authorities might need to put less emphasis on market definition and market structure and increasingly focus on dynamic competition impacts.

 [Background note](#) > || [Videos](#)  More resources: [www.oecd.org/competition/e-commerce-implications-for-competition-policy.htm](http://www.oecd.org/competition/e-commerce-implications-for-competition-policy.htm)

## Geographic Market Definition across National Borders (2016)

**Digitalisation is associated with global and borderless products, although this does not necessarily mean the relevant market for competition analysis is global.** In particular, the presence of foreign products and services is not automatic proof that the product market should be global, since competitive conditions in different geographic areas may differ. For instance, there may be limitations to the ability of domestic firms to compete in foreign firms' home countries. Cultural and linguistic factors, regulatory variation, and geoblocking may thus limit the geographic scope of digital product markets.

 [Background note](#)  More resources: [www.oecd.org/competition/geographic-market-definition.htm](http://www.oecd.org/competition/geographic-market-definition.htm)

## Competition Economics of Digital Ecosystems (2020)

**Dynamic competition should be a particular area of focus for competition authorities dealing with digital product ecosystems. In particular, the assessment of competition within a market may need to be complemented by an assessment of the dynamics between ecosystems,** which could for example be potential entrants in the market, or could make new entry into the market more difficult. More broadly, analysis focused on substitutability within a product market may need to be broadened to consider ecosystem dynamics.

> || [Videos](#)  More resources: [www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm](http://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm)

## Non-price Effects of Mergers (2018)




**Incorporating non-price dimensions of competition into merger assessments is crucial in digital markets.** In particular, mergers may affect the ability and incentives of firms to innovate, with implications for the cost and features of products on offer in the market in question, as well as potential new product markets. In addition, a wide range of dimensions of quality (including functionality, performance, convenience of purchase, reliability and privacy) may have as important an impact on consumers as price. Failing to consider non-price effects may result in inaccurate market definitions, assessments of market power, analysis of competitive effects, and evaluation of efficiencies.

**Determining whether a given parameter, such as privacy, is a relevant dimension of competition requires an understanding of the characteristics that consumers value.** Thus, authorities should be aware of potential risks associated with making determinations based on their assessments of what consumers should value. At the same time, a lack of differentiation among firms in a market in terms of privacy protection, for example, does not prove that it is not a relevant dimension of competition or measure of market outcomes.

**While the empirical evidence on the relationship between competition and innovation is mixed, it is clear that mergers can reduce innovation competition, affecting both current and future product markets.** For instance, mergers aimed at reducing efficiency by reducing duplicative innovation efforts may in fact deprive, or delay access by, consumers to the benefits of these innovations.

**To assess potential innovation impacts, authorities can identify current research and development pipelines to determine whether there is an overlap between the merging firms.** When such pipelines are not well-defined, or the future product from these innovation efforts is unclear, authorities can compare the innovation capability of the merging firms relative to competitors and potential competitors. This can help determine whether the merging firms have overlapping skills and assets, and whether the research and development capacity of any firms within or outside the market create sufficient competitive pressure to innovate. Internal documents, interviews with current and potential competitors, and industry analyst reports may be helpful in this analysis.

**When non-price competition plays an important role in a market, authorities may be faced with trade-offs between price and other dimensions of competition.** The use of quality-adjusted prices, or analysis of the impact of quality changes keeping price fixed, may facilitate analysis.

 [Background Note](#) >  [Videos](#)  More resources: [www.oecd.org/competition/non-price-effects-of-mergers.htm](http://www.oecd.org/competition/non-price-effects-of-mergers.htm)



## Quality Considerations in Zero Price Markets (2018)

**A price of zero does not prevent the application of competition law to a market, nor does it demonstrate there is no competition harm.** In particular, zero price products are generally offered as part of a multi-sided platform business model that subsidises them (e.g. through advertising), or in an effort to market other paid products (such as “freemium” business models that offer additional paid features).

**However, a price of zero may create practical challenges for competition analysis.** For instance, analyses of market power rooted in the ability of a firm to raise prices will need to be adjusted with quantitative data on product quality when possible, and with qualitative analysis.

**Analysis should also take into account behavioural characteristics on the demand side of the market that will affect its functioning and may lead to unexpected outcomes.** These characteristics may include the “free effect” (wherein consumers that receive a product at a price of zero are reluctant to begin paying even a nominal positive price for improvements to quality that they value positively), and the “privacy paradox” (wherein consumers report caring about privacy and data collection but may not reflect this in their purchasing decisions). A lack of willingness to pay a positive price for a product is not conclusive evidence that a firm does not have market power - especially if there is limited consumer response to profitable (from the firm’s perspective) decreases in quality on dimensions that consumers value. There may in fact be markets that would theoretically exhibit negative prices in perfect competition. Further, given the potentially unique nature of consumer behaviour, a price of zero could in fact constitute a behavioural barrier to entry for new firms that may need to charge a nominally higher price – even if those firms were to offer a higher level of quality in dimensions that consumers report they care about.

📄 [Background note](#) ▶ || 📺 [Videos](#) 🌐 More resources: [www.oecd.org/daf/competition/quality-considerations-in-the-zero-price-economy.htm](http://www.oecd.org/daf/competition/quality-considerations-in-the-zero-price-economy.htm)





## Consumer Data Rights and Competition (2020)

**There are several analytical challenges that can emerge for competition authorities when seeking to understand competitive dynamics in markets where consumer data plays an important role.**

- Opinions differ when it comes to assessing the value of a particular consumer data set, which is relevant to determining whether access to that consumer data set is a barrier to entry. Relevant factors to consider are whether the data set is unique (that is, whether the same consumer data can be obtained from other sources), and whether the data set is easily replicable. It will also be important to consider whether there are economies of scale and scope associated with the collection, use and storage of that data, and whether there is lock-in that prevents the data from being interoperable.

**Furthermore, a number of demand-side characteristics also raise analytical challenges for theories of harm involving privacy. In particular, consumers may lack awareness of how businesses collect and use their data, and may have few options other than consenting to data collection terms, making it difficult to assess privacy as a dimension of competition.**

 [Background note](#)   [Videos](#)  More resources: [www.oecd.org/competition/consumer-data-rights-and-competition.htm](https://www.oecd.org/competition/consumer-data-rights-and-competition.htm)



# 4

## Tackling new forms of misconduct in digital markets

Competition authorities face a complex environment when addressing potential misconduct in digital markets. In particular, many concerns relate to conduct, strategies and innovations that are ambiguous in their effect because they hold significant procompetitive potential, such as seamlessly integrated services, greater transparency, dynamic pricing, lower searching costs from price comparison websites, and the convenience of e-commerce. Businesses also benefit, including small businesses that enjoy greater access to consumers and the ability to leverage large platform network effects. However, these benefits may also have a corresponding competition harm. Algorithmic pricing may be a tool for collusion. Network effects and economies of scale and scope can increase the effectiveness of exclusionary conduct by dominant firms. The centrality of digital platforms in certain markets can enable vertical foreclosure, or the imposition of restraints that limit the intensity of competition. And the underlying characteristics of digital markets could give rise to tipping, meaning that the effects of abusive conduct may be particularly serious in these markets.

Thus, dealing with potential misconduct in digital markets will often require a careful balancing act. The grey zone between clearly procompetitive and clearly anti-competitive conduct seems to have become bigger, while the risks of not intervening have become more serious. Further, there are concerns that novel forms of misconduct, such as algorithmic collusion, can be difficult to detect, and in some cases harder to prosecute under current competition laws. This has led to questions about whether certain concepts must be revisited, ranging from the definition of a collusive agreement, to the application to digital markets of theories of harm focused on vertical integration in network industries.

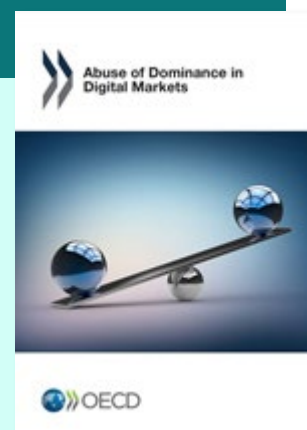
In sum, the OECD's work on misconduct in digital markets has found that many of the core principles, analytical concepts, and areas of concern continue to be relevant. However, authorities will need to be on the lookout for new forms of misconduct and new tools for detection and analysis. At the same time, there is growing consensus that some concerns cannot be addressed under current enforcement frameworks, either because they do not apply, or they may not be effective in rapidly-changing markets, and as such might need a degree of ex ante regulation (as described further in Chapter 7).

## Key insights from OECD work on misconduct in digital markets

### Abuse of Dominance in Digital Markets (2020)

**Concerns about potential abuse of dominance or monopolisation strategies may be particularly common in digital markets**, not just because market power may be more common, but also because of the nature of digital business models and relationships. In particular, many digital markets may feature vertical integration, ecosystem or conglomerate business models, and cross-subsidisation (including zero priced products). Each of these characteristics may lead to particular competition concerns, or at least complaints from competitors about alleged misconduct.

- Refusal to deal and margin squeeze cases may arise with respect to the conditions of platform access or access to data, or the technical information needed to participate in a product ecosystem. However, these theories of harm may not easily apply in digital markets where the essential (or non-replicable) nature of a platform or other input, such as data, cannot be easily established. Further, establishing appropriate access remedies to these concerns can be challenging, and regulatory alternatives may be more appropriate.
- Predatory pricing complaints may also arise in the context of zero or low prices offered to consumers by dominant firms. These complaints must be carefully assessed in the context of multi-sided business models, network effects, or other features (e.g. offering both zero price and paid “premium” options) that may be the reason for such prices. Traditional predatory pricing tests based on margins are not appropriate in many digital markets, and instead authorities should ask whether the conduct in question is not solely a strategy to deny rivals scale and network effects.
- Bundling and tying strategies may be particularly common, and easier to implement, in digital markets given the linkages between products in terms of both demand and supply. These strategies may benefit consumers when they generate substantial economies of scope or scale, enhance network effects, or otherwise increase quality and convenience. However, when bundling and tying are used as a strategy to foreclose competition, they may be harmful to competition. This can occur, for example, when bundling seeks to deny rivals network effects or prevent the entry of standalone products. There is ongoing debate about what constitutes tying in digital markets, for example whether a “nudge” that takes advantage of consumer biases would qualify, and if so, in what circumstances.



- Exclusive dealing and loyalty rebate concerns may also emerge in digital markets. For instance, discounts can be granted in the form of free add-on services, or dominant firms can impose exclusivity relationships with consumers by limiting data portability or limiting the ease with which consumers can multi-home. Like below-cost pricing, in certain circumstances exclusivity and loyalty rebate strategies can enhance competition, leading to vigorous competition for the consumer, although they can undermine competition if they are used to deny competitors the ability to generate a base of consumers in markets characterised by network effects.
- Jurisdictions that consider exploitative abuses of dominance may consider issues regarding data collection or advertising exposure, among other dimensions of quality in digital markets. Concerns with respect to these parameters could be evaluated as excessive prices or unfair terms stemming from unequal bargaining power, depending on the specific case and legislation in the jurisdiction. Determining what prices are excessive, or what terms are unfair, has always been a challenge in exploitation cases, but these challenges may be compounded in digital markets, given that the focus may be on parameters unrelated to monetary prices. Without a clear yardstick to evaluate terms, there may be significant uncertainty among digital market participants about exploitative abuse of dominance enforcement.

**Abuse or monopolisation cases in digital markets may take a different form from those in established sectors.** Some new theories of harm unique to digital markets have been identified, namely forced free riding, abusive leveraging/self-preferencing, and privacy policy tying. However, in many cases these theories can be considered variants of established concepts regarding exclusivity, margin squeeze and bundling. New forms of anti-competitive conduct may well arise as innovative business models develop. However, where new theories depart from established concepts, care may be needed given the need to ground exclusionary concerns in economic analysis.

 [Background note](#) > || [Videos](#)

 More resources: [www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm](http://www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm)

## Algorithms and Collusion (2017)

**Algorithms and associated technologies such as machine learning offer substantial benefits for both firms (including efficiency improvements and new products) and consumers (who may use algorithms to facilitate decision making).**

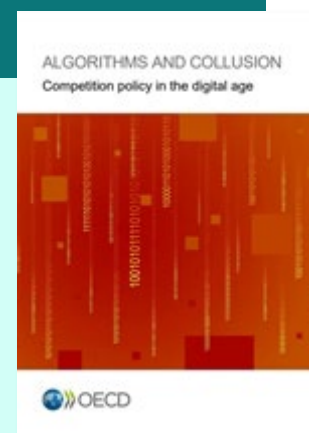
**However, in some circumstances algorithms can also raise competition concerns. In particular:**

- Algorithms could make markets more prone to collusion, by changing structural characteristics such as transparency and frequency of interaction. This can increase firms' incentives and ability to collude.
- Further, algorithms can be used to facilitate the implementation of collusive agreements, including monitoring and punishment for deviation.
- Finally, algorithms could also replace explicit collusion with tacit coordination, by providing companies with automatic tools to implement a collusive agreement without direct communication – a risk particularly pronounced if firms use the same pricing algorithms. Theoretically, machine learning algorithms could even achieve tacit collusive outcomes without being explicitly programmed to do so.

**Competition authorities have prosecuted a limited number of cases involving explicit collusion facilitated by algorithms. However, there remain significant concerns about the risk of tacit collusion as a result of algorithmic pricing, which may be difficult to address under competition law.** Some suggest a need to consider updating the definition of an agreement to reflect communication between algorithms, and to consider liability issues regarding algorithm design.

- In order to address risks of algorithmic collusion, competition authorities can rely on certain existing tools. For example, agencies may find it useful to conduct market studies which could help identify markets where algorithms might pose more serious concerns and identify potential regulatory or enforcement solutions. In addition, authorities could pay particular attention to potential co-ordinated effects of mergers in markets where pricing algorithms are used. Another option could be to use commitments and remedies to prevent the use of algorithms as a facilitating practice, including through special compliance programs, monitoring mechanisms and principles for algorithmic transparency.

 [Publication](#)  More resources: [www.oecd.org/daf/competition/algorithms-and-collusion.htm](http://www.oecd.org/daf/competition/algorithms-and-collusion.htm)



## E-commerce (2019)

**A defining characteristic of e-commerce markets is the re-emergence of vertical restraints as a competition law concern.**

- The most common category of vertical restraints is supplier-imposed restrictions upon online retailers, which typically seek to ensure a degree of equivalence between the online and offline retail experience, as well as to prevent free riding. Examples of such restrictions include selective distribution systems, bans on internet sales, retail price maintenance (RPM), dual pricing policies that raise wholesale prices for online retailers, and bans on use of certain tools, such as marketplaces and price comparison engines. However, these vertical restraints have also the potential to limit significantly the greater price competition and consumer choice that is associated with the growth of e-commerce, and to stifle innovation in the long term.
- A second major category of vertical restraints comprises most-favoured nation (“MFN”) clauses imposed by online retail platforms upon providers that sell through the platform. In this context, MFN clauses have often an effect that is equivalent to “price matching” guarantees, that is, the platform is guaranteed prices or other terms of sale that are, at least, as attractive to consumers as those offered through any other sales channel. Although platforms typically deploy MFN clauses to prevent free riding, these clauses may also reduce sellers’ incentives to engage in price-cutting, facilitate collusion between suppliers and function as a barrier to entry.
- The optimal antitrust treatment of vertical restraints remains, however, a much-disputed issue across jurisdictions. Regardless of the specific legal approach taken, many jurisdictions do consider justifications for certain restraints.
- The e-commerce sector has seen also several instances of hub-and-spoke cartels.

 [Background note](#)  [Videos](#)  More resources: [www.oecd.org/daf/competition/e-commerce-implications-for-competition-policy.htm](http://www.oecd.org/daf/competition/e-commerce-implications-for-competition-policy.htm)

## Across-Platform Parity Agreements (2015)

**There is increasing concern about online platforms using across platform parity agreements (APPAs) that prevent producers from setting lower retail prices on their own sales channels or on rival platforms that offer more competitive commission rates.**

- These agreements remove the incentive for platforms to compete on the commission they charge to producers, since they cannot differentiate in terms of the price offered to consumers. Further, platforms can increase their commissions without experiencing a corresponding drop in volume. Thus, APPAs can significantly inflate the commissions and the final prices paid by consumers, leading to industry-wide price uniformity.



- APPAs may also prevent entry from new low cost platforms (which cannot gain market share with lower commissions), and prevent competition in terms of innovation or quality offered to suppliers (since suppliers are unable to steer consumers to a particular platform).
- In addition, there is a risk that APPAs can facilitate collusion, given that they create an automatic punishment mechanism for firms that deviate from a collusive agreement.

**APPAs may also have efficiency enhancing effects that are beneficial for consumers.** They can remove the risk of “free-riding”, for example when consumers use a platform to compare products and enjoy additional services (such as customer reviews), and then purchase their favoured product directly from the producer or on a cheaper platform.

- Free-riding can theoretically create disincentives to invest in platform quality and innovation. However, there are questions about whether APPAs are needed to address these risks, and whether there are less restrictive alternatives. Such alternatives can inform a competition authorities’ analysis of counterfactuals when evaluating efficiencies.

**The magnitude of the anti-competitive effects of APPAs will depend on the market power of the platform requesting the agreement, and the scope of the agreement. A case-by-case assessment of harm may therefore be needed.**

- Broadly-defined APPAs require that producers set prices on a platform that are the same as the prices that consumers might find on other platforms or in other sales channels. This can therefore lead to the elimination of intra-brand retail price competition.
- In contrast, narrowly-defined APPAs, which impose parity only between the platform and the producer’s own website, might maintain a degree of price competition amongst platforms, while avoiding what can often be the major source of free-riding (i.e. direct sales on the producer’s website). However, these APPAs may still generate harm in some cases where suppliers cannot credibly threaten lower prices on rival platforms when this would mean undercutting their own websites – a risk more pronounced if the supplier does not have a strong brand.

**The approach taken by competition authorities to APPAs varies. In some cases, they are dealt with as vertical restraints, while in others they are dealt with as price fixing and thus by object infringements. Some authorities have prohibited APPAs in specific markets, and in another case, government legislation prohibited APPAs.**

- The selection of appropriate remedies in cases related to APPAs can be a challenge. Some authorities have sought to address the risk of alternative strategies that can have equivalent pricing parity effects to APPAs in their remedy design. There is also a risk that remedies narrowing the scope of APPAs (excluding offline sales channels and other platforms) may in fact impose additional search costs on consumers, reduce inter-brand competition and lead to higher prices.

 More resources: [www.oecd.org/daf/competition/competition-cross-platform-parity.htm](http://www.oecd.org/daf/competition/competition-cross-platform-parity.htm)

## Hub-and-Spoke Arrangements (2019)

**A number of digital tools can facilitate indirect co-ordination among competitors and enable hub-and-spoke arrangements – even in less concentrated markets where such risks are traditionally lower.**

- In particular, when horizontal competitors use the same third-party pricing algorithms, there may be increased risk of co-ordination. Price monitoring and tracking software can also facilitate information exchange and disincentivise deviations from a collusive agreement. Such information exchanges may reduce bilateral communications by firms, leading to detection and prosecution challenges. Further, retail platforms may also assume the role of a hub to align the competitive behaviour of suppliers active on the platform, for example through the use of retail price maintenance.
- However, while enforcers will need to be aware of developments regarding these digital tools, the current legal framework and enforcement tools seem adequate to address the risks.





📖 [Background note](#) ▶ || [Video](#) 🌐 More resources: [www.oecd.org/daf/competition/hub-and-spoke-arrangements.htm](http://www.oecd.org/daf/competition/hub-and-spoke-arrangements.htm)



## Blockchain and Competition Policy (2018)

**Like many new technologies before it, blockchain creates an opportunity to reduce prices, improve quality, and disrupt the market power of incumbent firms. However, there may also be investigative challenges in markets using blockchain.**

- Firms are increasingly turning to a consortia model to explore blockchain solutions, and such collaborative efforts can be pro-competitive. However there are the traditional risks that such co-operation can lead to sharing of competitively sensitive information. Other potential risks include the use of collective boycotts to prevent rivals joining a blockchain, or the use of the blockchain to store collusive agreements. Given the additional transparency and trustworthiness of transaction data on a blockchain it may also be the case that tacit coordination becomes easier to monitor and hence more stable.
- There are a number of particular challenges in investigating abuse of dominance by a blockchain. For instance, it is not always clear at first sight who would be liable for any such conduct, and this could create practical difficulties for enforcement. In addition, identifying dominant positions would itself require careful consideration of the nature of the different competitive constraints upon a blockchain. However, the nature of the competitive concerns over exclusionary conduct are not particularly different from those that are found in other markets and hence the tools and analytical frameworks for examining them remain broadly the same.

 [Issues paper](#)  [Publication](#)  [Videos](#)  More resources: [www.oecd.org/daf/competition/blockchain-and-competition-policy.htm](http://www.oecd.org/daf/competition/blockchain-and-competition-policy.htm)

## Personalised Pricing (2018)

**Consumer protection law is generally a more appropriate tool to prevent exploitative forms of personalised pricing – which may qualify as an unfair trade practice under certain circumstances – as well as to deter misleading practices ancillary to personalised pricing. However, in certain specific situations, personalised pricing may give rise to competition concerns.**

- In light of the overall economic effects of personalised pricing, prohibiting these practices altogether could ultimately reduce market efficiency and have the unintended effect of harming consumers.
- In some circumstances, harmful forms of personalised pricing could potentially infringe competition law, either as an exploitative or exclusionary abuse of dominance. On the one hand, personalised pricing could potentially qualify as an exploitative abuse under the category of excessive or unfair pricing, if there is evidence that consumers are charged a higher price for reasons not related to costs. On the other hand, personalised pricing could potentially qualify as an exclusionary abuse when firms use personalised pricing to target rivals' consumers with predatory prices, in an attempt to foreclose the market.

 [Background note](#)  [Videos](#)  More resources: [www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm](http://www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm)



## Competition in Labour Markets (2019)

**Platforms' monopsony power in labour markets may arise from different sources.**

- Concentration in labour markets is of particular importance. The ability of service providers to switch to a different platform (e.g., in case of a real wage cut) may depend on contractual arrangements or the actual availability of outside employment options.
- Switching costs and regulatory barriers to labour mobility may also further reduce labour market competition.

**The pervasiveness of platforms' monopsony power may enable them to implement different vertical restraints.**

- Gig economy platforms may, for instance, fix the prices that their contract service providers charge to consumers, leverage bonus-based pay policies to induce service providers to work in areas and at times that are most favourable to the platform, penalise workers for multi-homing.

**Despite little historical enforcement in this area, antitrust enforcement can play a role, if labour market monopsony arises due to anti-competitive conducts.**

📖 [Background note](#) ▶ [Video](#) 🌐 More resources: [www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm](https://www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm)



# 5

## Merger control in digital markets

**M**ergers in digital markets have led to some fundamental questions for competition authorities in terms of the economic foundations of their work, their analytical tools, and their legislative frameworks. Brand new theories of harm with colourful names have attracted new attention, and questions have been raised about past decisions.

While many established concepts underpinning merger control remain valid, and authorities may in fact need to dust off theories designed long ago in traditional markets. At the same time, new market dynamics and characteristics will need to be factored in. Some things to consider in this process include:

- **The prominence of vertical and conglomerate theories of harm in recent discussions about digital markets.** Many competition concerns in digital markets appear to feature a vertical component, namely foreclosure strategies focused on access to a given platform, technology or dataset. Digital sector mergers may also be conglomerate in nature (they bring together firms that are not currently competitors or in a supply relationship). However, the distinction between these categories and horizontal mergers is becoming blurred. Downstream consumers may one day become a large platform's rival in some markets, and incumbents may rapidly enter related markets by building off their knowledge and resources. Competition authorities must grapple with this complexity, and may need to consider vertical and conglomerate mergers, which previously captured little attention, given the particular characteristics of digital markets, in addition to potential future horizontal concerns.
- **New merger and acquisition strategies may need to be considered in merger review, and may require adaptations to existing frameworks.** In particular, authorities are increasingly exploring acquisitions by incumbents of nascent competitors, which may not have attracted significant attention, or even been notified, in the past.
- **The effects of mergers on dynamic competition, and non-price dimensions of competition, may require particular attention and adapted analytical tools.** In particular, competition authorities may find the effects of a merger on innovation abilities and incentives to be especially important in some digital markets, requiring them to grapple with long-term considerations and the associated uncertainty. Careful attention will also be needed to the validity, and merger specificity, of claimed efficiencies when there is a risk of these harms.



- **While some claims have suggested past failures in merger control are responsible for current trends in digital markets (for example with respect to mark-ups), evidence on this point is limited.** In particular, relatively few past mergers have been identified as having had a substantial negative impact on competition. However, more ex-post assessments of mergers are needed to better understand the role of mergers in current digital market trends, and whether tools and concepts should change. Competition authorities should engage in these assessments, and may wish to explore co-operation with academia to gain insights on a larger number of past digital sector merger decisions.

## Key insights from OECD work on merger control in digital markets

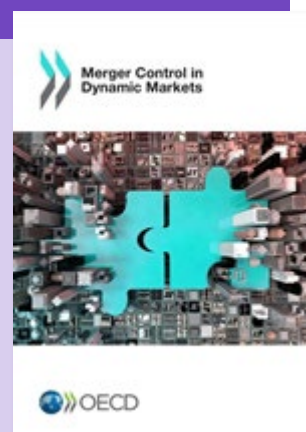
### Merger Control in Dynamic Markets (2019)

**The dynamic nature of digital markets poses a challenge for competition authorities, particularly when the effects of a merger may continue to develop beyond the time horizon normally considered in a merger review.**

- In particular, the high rates of entry and exit, as well as the tendency of innovations to disrupt business models, can create challenges for predicting future merger effects in digital markets. While a longer analytical timeframe may be needed to fully capture the effects of a merger, it may also increase the risk of uncertainty in prediction and decision-making.
- In order to capture dynamic effects, authorities can pay particular attention to the innovation capacity of the firms in the market (and potential innovation competitors outside the market), the stability of market shares over time and the significance of entry barriers.
- Efficiency gains from mergers may be particularly significant in dynamic markets, including potential increased innovation incentives and capabilities. However, these efficiencies should be carefully assessed for the degree to which they cannot be achieved without a merger, and should be placed in the context of potential short-term competition harms.

**Structural remedies can be appropriate and practical solutions to certain competition harms associated with mergers in dynamic markets.** In particular, a structural remedy can focus on the divestiture of research and development capacity to protect long-term innovation competition.

 [Background note](#)  More resources: [www.oecd.org/daf/competition/merger-control-in-dynamic-markets.htm](http://www.oecd.org/daf/competition/merger-control-in-dynamic-markets.htm)



## Start-ups and Killer Acquisitions (2020)

**Recent empirical work focusing on the pharmaceutical industry has identified a trend of “killer acquisitions”, in which incumbents acquire nascent competitors and discontinue their products (or product development efforts).**

- Killer acquisitions are part of a broader category of merger harms involving the acquisition by an incumbent of an emerging or potential competitor. These acquisitions may harm competition when: the target has recently introduced a product that directly competes with the acquirer’s products; when the target’s products are weak substitutes for the acquirer’s but they may grow closer in time; or when the target will in the future introduce a competing product in current or new product markets.
- **The potential harms associated with these transactions has received increasing attention given concerns about rising market power (as evidenced by growing mark-ups and concentration).** Theories of harm regarding the acquisition of nascent competitors are not often investigated, and there are no indications of over-enforcement in this area.

**In jurisdictions with mandatory pre-merger notification systems that rely on revenue thresholds, acquisitions of nascent competitors may not be notified to the authority (given a nascent target may not generate any revenue).**

- In other jurisdictions, current merger review frameworks can be sufficiently flexible to capture these transactions, including those using a share of supply test, and those allowing authorities to investigate and challenge non-notified transactions. Some jurisdictions have already introduced new transaction-value thresholds.

**Investigating the acquisition of nascent competitors can be particularly challenging given the uncertainties involved. While these questions involve substantial uncertainty, authorities must balance this challenge with the risks of not intervening in markets with a credible risk of competition harm. Established assessment frameworks remain relevant, and certain types of evidence, including internal documents, may be particularly helpful.**

- Authorities must assess the likelihood of the target emerging as a competitor on its own, whether the target is a “maverick” or disruptive competitor, and whether it would likely be acquired by another competitor or potential competitor in the market. This may be less challenging in markets with well-established product development pathways, like pharmaceuticals, compared to digital markets.
- It is also relevant to consider whether IP, regulatory or other challenges could impair the target’s ability of reaching commercial success. However, the evidence need not establish that the target would eventually match the scale and scope of the acquiring firm in order to demonstrate harm. Even smaller entities with a competitive product could, depending



on the market, impose a competitive constraint (and thus the acquisition of these firms may harm competition).

- The timeframe for the assessment of these acquisitions will be crucial, since applying too short a timeframe could risk underestimating the potential for harm.
- Contemporaneous internal documents that provide an understanding of how the acquirer sees the target (and the potential competitive threat it poses), and what it plans to do with the target's current research and development efforts can be useful to authorities. In addition, it can be informative to review business plans that lay out the target's strategy in order to assess the target's future potential role as a competitive constraint. It will also be necessary to seek the views of other potential acquirers, consumers and neutral third parties. The risk of convenience bias (placing undue focus on viewpoints that are easily available) should be guarded against in evidence-gathering.
- Valuation analysis has also been identified as a potentially useful, albeit challenging, approach for assessing the acquisition of nascent competitors. In particular, an authority could attempt to break down the components of the acquisition price for the target to determine whether a premium is being paid for anti-competitive effects. This could involve valuing the current cash flows of the target as well as potential synergies expected by the incumbent, and then determining whether any remaining components of the transaction value could represent gains from lessened competition. The valuation analysis of other bidders for the targets may also be helpful as a point of comparison.

**Caution may be needed in assessing any efficiencies associated with the acquisition of a firm's emerging rival.**

- For example, it is not clear that a merger could be justified on the grounds that it allows a nascent firm's product to be offered to an incumbent's large installed base. Further, it is not clear that dynamic efficiencies associated with facilitating the exit of entrepreneurs from the market would be of benefit to consumers. The concept that the prospect of acquisition by a large incumbent incentivises innovation, for example, remains a controversial one.

**Looking forward, several changes to merger notification frameworks are being considered in response to concerns about the acquisition of nascent competitors.**

- First, some agencies have implemented new transaction value notification thresholds to ensure the acquisition of nascent competitors are captured. The rationale for these changes is that a high purchase price for a company with a minimal turnover may indicate the target is competitively relevant and the loss of competition is material. However, it remains too early to say whether these thresholds have effectively identified potentially harmful acquisitions of nascent competitors. Further, there is a need to ensure new notification thresholds do not lead to a burdensome influx of notifications to authorities.
- Additional proposals include the use of market share thresholds, and applying filters based on product and transaction type (acquiring products with standalone potential could, for example, be a greater source of concern than an "acquihiere" transaction aimed at recruiting talent).

- Competition authorities could also impose automatic notification requirements on specific firms operating in specific markets that are potentially more at risk of nascent acquisitions, such as digital markets. Furthermore, there are proposals to make use of, or introduce, powers to conduct ex-post reviews of completed transactions involving nascent firms.

**Other proposals seek to adapt merger assessment frameworks to address specific concerns related to nascent competitor acquisitions.**

- Another proposal subject to debate is the reversal of the burden of proof regarding the competitive effects of mergers in some situations. For example, some call for a rebuttable presumption that acquisitions of a nascent rival by entrenched dominant companies are anti-competitive. This could help address significant information asymmetries between competition authorities and large incumbents.
- Finally, some have called into question whether the balance of probabilities test for merger review (requiring, for instance, agencies to find that the nascent firm is likely to succeed as a business) risks impeding the ability of authorities to challenge anti-competitive acquisitions of nascent firms. As an alternative, proposals have been made to consider both the likelihood of harm as well as the magnitude of harms, thus ensuring that scenarios with significant potential harm are considered even if they are not assigned a probability of over 50%.

 [Background note](#)  [Videos](#)  More resources: [www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control.htm](http://www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control.htm)

## Vertical Mergers in the Technology, Media and Telecom Sector (2019)

**Vertical mergers can generate significant efficiencies, in particular better co-ordination of investment and operations, as well as economies of scope. However, agencies should carefully assess any such claimed efficiencies.** One commonly claimed efficiency, the elimination of double marginalisation, may also have an anti-competitive element in certain situations (when the post-merger firm steers consumers toward products for which its supply chain is vertically integrated, leading to foreclosure concerns).

**A minority of vertical mergers may also lead to competition concerns if they will result in the post-merger firm having the ability and incentive to engage in anti-competitive conduct. Empirical study to date has not found widespread evidence of such harms, however.**

**The technology, media and telecom sector has exhibited significant vertical merger activity in recent years.** Further, vertical mergers in this sector are proportionately more likely to lead to competition authority interventions, potentially indicating that this sector is more likely to elicit competition concerns.

**The main source of competition harm stemming from vertical mergers relates to foreclosure.**

- In particular, a post-merger vertically-integrated firm may have the ability to engage in foreclosure if it has market power either upstream (i.e. over an essential input without easy substitutes) or downstream (i.e. over a distribution network without easy substitutes).
- There remains an open debate about whether a post-merger firm would have an incentive to engage in such foreclosure, even if its ability to do so has been demonstrated. The debate centres around the single monopoly profit theory, which suggests that a vertically-integrated firm with an upstream monopoly would not need to foreclose downstream competition to increase its rents (since it can already charge a monopoly price).

**Vertical mergers may also give rise to co-ordinated effects**, in particular when they result in the elimination of disruptive buyers or sellers that compete aggressively and provide a competitive constraint in a market.

 [Background note](#) ▷  [Video](#)

 More resources: [www.oecd.org/daf/competition/vertical-mergers-in-the-technology-media-and-telecom-sector.htm](http://www.oecd.org/daf/competition/vertical-mergers-in-the-technology-media-and-telecom-sector.htm)

## Conglomerate Effects of Mergers (2020)

**Conglomerate mergers can generate significant efficiencies**, both on the supply side (including production inefficiencies, enabling investments in product complementarities) and the demand side (such as one-stop shopping and common user interfaces). However, it is not always clear that a merger is required to achieve these effects.

**While empirical evidence is limited, economic theory suggests that conglomerate mergers can harm competition in specific situations.** These mergers are rarely challenged by competition authorities. However, even when no horizontal or vertical relationship exists (or is likely to exist in the future) between the merging parties, competition harms may still emerge. In particular, if the merging firms have market power in at least one market, they may have both the ability and incentive to either foreclose competition or raise rivals' costs. The primary mechanism for doing so is bundling or tying.

- Bundling and tying theories of harm generally focus on products that are complements (meaning that they are consumed together), although in specific circumstances, harm may also arise when substitute or unrelated products are bundled or tied together.
- Merger review can assess the ability and incentive of firms to engage in these strategies, and thus prevent future anti-competitive conduct.

**Conglomerate mergers in digital markets may be relatively more likely to result in competition concerns.** This is due to market characteristics that increase the likelihood of harm, including economies of scale, low marginal costs, economies of scope, feedback loops and network effects. While these characteristics can generate consumer benefits, they can also create incentives for the post-merger firm to tie and bundle. Tying may also be easier for firms



to implement, for example through the degradation of interoperability with the complementary products of their competitors.

- New conglomerate merger theories of harm have been specifically tailored to digital markets. One such theory suggests a post-merger firm may use a zero-priced product to obtain consumer data collection consent that can be used to build up a user base in a related market. This strategy could prevent competitive threats from emerging in the origin market by denying potential entrants the ability to build up users and data in the related market.
- Conglomerate mergers in the digital sector may also give rise to broader policy concerns that cannot easily be addressed through merger control. Specifically, there may be concerns that post-merger firms with market power in several related markets could give rise to systemic risks, broaden the distortionary impact of subsidies or other state support, and concentrate lobbying and public advocacy power.

**In order to determine whether preliminary information gathering and analysis of a merger should take into account potential conglomerate effects, authorities can use certain preliminary indicators.** In particular, conglomerate harms are not likely to emerge unless at least one of the merging firms has strong market power, and the other market or markets feature significant entry barriers, economies of scale or network effects. If these conditions do exist, additional risk factors could be assessed; including:

- whether the products are complements and there are alternative uses or repeated purchases of one of the products
- whether the products are weak substitutes or unrelated but feature substantial overlaps in consumers
- whether bundling in tying is common in the markets and technically feasible
- whether there is a significant likelihood that one of the markets involved in the merger could be used as a stepping stone to challenge the merging firms' market power in another market.
- Authorities can target their information gathering efforts, at least initially, on understanding the rationale for the merger, particularly the role of economies of scope, demand-side efficiencies, bundled discounts, and applying firm assets and know-how into new markets.

 [Background note](#) ▷  [Videos](#)  More resources: [www.oecd.org/daf/competition/conglomerate-effects-of-mergers.htm](http://www.oecd.org/daf/competition/conglomerate-effects-of-mergers.htm)



# 6

## Competition law remedies in digital markets

The preceding chapters highlight the unique features of digital markets that may give rise to competition problems, and the unique forms that misconduct and merger harms can take in these markets. This uniqueness poses challenges for the selection of remedies as well. While durable market power may well arise, it is different in character to the natural monopolies of the past – particularly given the role of dynamic competition, innovation, and complex product ecosystems. Should authorities therefore revise their approach to remedies, for example placing a particular emphasis on behavioural measures? Three key messages arise from the OECD's work in this area:

- **Structural remedies and line of business restrictions remain the simplest to monitor and arguably most effective approach to anti-competitive mergers and conduct. However, they may not be feasible in digital markets,** particularly when they are incompatible with platform business models and rely on unsupported conclusions about the source of market power (for example when they equate data inputs for which substitutes exist with the network monopolies of the past).
- **Behavioural remedies require careful design and oversight, given the incentives of the firms subject to these remedies. Co-ordination with sector regulators and other authorities with such oversight functions may therefore be needed.** Further, no single behavioural remedy is a single bullet in digital markets – conditions in a market must be suitable for data portability or interoperability measures, for example, to be effective.
- **It is crucial for competition authorities to consider dynamics on the demand side of digital markets. These dynamics can exacerbate harm, and may limit the effectiveness of any remedies imposed.** The sources of demand-side problems in digital markets should be identified, and, while remedies to address these problems are particularly difficult to design and implement, should not be ignored.

# Key insights from OECD work on competition law remedies in digital markets

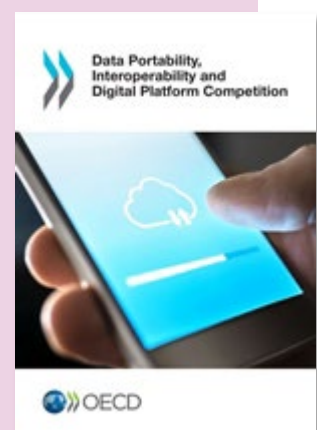
## Data Portability, Interoperability and Competition (2021)

**Data portability and interoperability can play a role in promoting competition both among and within digital platforms.**

- Data portability measures aimed at promoting competition seek to reduce user switching costs and reduce the frictions associated with trying new services. This could, in turn, stimulate competition by making it easier for new entrants to attract users and potentially alleviate barriers to entry associated with data access (in those markets for which individual-level data is valuable).
- Interoperability measures are distinct but related to data portability, in that they focus on allowing systems to communicate with one another. Interoperability measures could allow users to multi-home and make markets more contestable. Depending on their design, interoperability measures can promote competition among digital platforms, by allowing users to preserve network effects on new services, and within digital platforms, by allowing users to mix and match different complementary services from different providers. The promotion or mandating of interoperability reflects a judgment that the market has not reached an optimal level on its own.

**In some markets, however, the competition benefits of measures that promote data portability or interoperability may be limited.**

- When a dominant digital platform faces no rivals (including potential entrants with sufficient capacity to compete), these measures may be more appropriate for promoting competition in related and complement markets than in enabling the emergence of rivals to the core platform.
- The value of an individual user's ported dataset may also be limited for the purposes of a new entrant seeking to counter an established incumbent's advantage in collected data.
- Interoperability measures may need to be limited to markets that are not rapidly evolving due to innovation, and focused on a particular set of firms with durable market power.



**Whether implemented through competition enforcement or regulation, data portability and interoperability measures should be selected and designed to avoid unintentional competition harms, for example imposing significant burdens on new entrants, entrenching an incumbent's systems and technologies, or discouraging innovation through overbroad standards.**

- Further, the objective of data portability and interoperability measures matters. Portability and interoperability measures implemented with objectives other than competition (such as data protection) may not have pro-competitive impacts unless designed with market dynamics in mind. This suggests the importance of involving competition authorities in the design of these measures, and close co-operation between different authorities in implementation.

**Experiences with data portability and interoperability measures to date provide some key considerations to bear in mind;** particularly the need for: clear definitions of scope and procedures (such as data transferral delays or the format of data to be transferred); conditions such as non-discrimination requirements designed with competition objectives in mind; the designation of an entity or authority with rulemaking, dispute resolution and compliance monitoring power; and careful consideration of how to fund implementation.

- Further, data portability and interoperability measures may need to be complemented with other approaches, including a better understanding of demand-side behavioural factors that may be limiting competitive dynamics.

 [Background note](#) ▷  [Videos](#)  More resources: [www.oecd.org/daf/competition/data-portability-interoperability-and-competition.htm](http://www.oecd.org/daf/competition/data-portability-interoperability-and-competition.htm)

## Line of Business Restrictions (2020)

**Line of business restrictions are used to address competition concerns associated with vertical integration or conglomerate business models in specific situations.** In particular, they may be used to address concerns about refusals to deal, margin squeeze, or bundling. These restrictions can be imposed in the context of abuse of dominance (or monopolisation) investigations, merger control, or regulation.

**Structural line of business restrictions are tailored to situations in which there are natural monopolies in a given market, for example in traditional network industries. These remedies may not be appropriate in digital markets where competition among platforms is feasible.** In particular, the natural monopoly advantages of traditional networks are often not equivalent to the dynamics of digital platforms that rely on large volumes of data.

**Behavioural line of business restrictions aimed at preserving downstream competition may, however, be relevant tools in digital markets.** These include interoperability standards to promote competition in downstream markets, and potentially non-discrimination obligations to address leveraging concerns.

 [Background note](#) ▷  [Videos](#)  More resources: [www.oecd.org/daf/competition/line-of-business-restrictions-as-a-solution-to-competition-concerns.htm](http://www.oecd.org/daf/competition/line-of-business-restrictions-as-a-solution-to-competition-concerns.htm)

## Consumer-facing Remedies (2018)

**Remedies aimed at addressing demand-side problems in digital markets can include: improving the information made available to consumers, making it easier for consumers to shop around (e.g. with comparison tools) and facilitating switching (e.g. through easy transfer of data).**

- The design of remedies should minimise the burden on consumers, leverage available technological solutions, and take into account the likely supply-side response to the measures being considered. Careful testing is crucial, and multiple iterations of remedies may be required, so competition authorities should not overestimate the ease with which demand-side problems can be addressed.
- Consideration should also be given to whether a measure will stimulate competition, or if it is more properly in the domain of consumer protection or sector regulators. Synergies can be found for competition authorities by cooperating with these regulators in the design of consumer-facing remedies.

 [Background note](#) >  [Videos](#)  More resources: [www.oecd.org/daf/competition/consumer-facing-remedies.htm](http://www.oecd.org/daf/competition/consumer-facing-remedies.htm)





# 7 The impact of disruptive innovation on sectors and regulatory frameworks

**W**hile competition law enforcement occupies much of the discussion on digital competition issues, the role of regulatory barriers to competition is also crucial. In particular, regulatory frameworks that are out of date, unnecessarily restrictive, or premised on business models undergoing disruption can result in serious competition harms. They may prevent new innovations from emerging, or create an imbalanced playing field that favours incumbents and lead to disputes about compliance.

The OECD Competition Committee's work on disruptive innovation has explored how these new business models, often based on digital technology, can fundamentally reshape markets. They can introduce new products and services, cut costs, limit intermediation, and improve quality – particularly in previously stagnant markets featuring a small number of large incumbents. Competition policy, including competition authorities, have a key role to play in identifying regulatory frameworks that unnecessarily restrict competition, and proposing alternatives. This process is not without challenges, as it involves balancing sometimes competing policy objectives (potentially including new concerns, such as data protection), and significant uncertainty in markets undergoing rapid changes. Some strategies, such as the use of regulatory sandboxes and close co-operation among regulators, can help.

The OECD has updated its [Competition Assessment Toolkit](#) to take account of the unique challenges that may emerge with respect to regulatory barriers to competition in digital markets. The Toolkit provides practical guidance on detecting, assessing, and identifying alternatives to regulatory barriers to competition.

## Competition Assessment Reviews and the OECD Competition Assessment Toolkit

OECD Competition Assessment Reviews provide an analysis of regulatory restrictions on competition in the countries reviewed and make specific policy recommendations for reform. The resulting recommendations allow governments to introduce more competition into the economy and foster long-lasting growth.

Iceland (2020), ASEAN (2021), Tunisia (2019), Mexico (2019, 2018), Portugal (2018), Greece (2017, 2014, 2013) and Romania (2016) have already undergone similar reviews, and reviews are currently ongoing in Brazil and Tunisia.

Access all reviews and the toolkit at [oe.cd/cat](https://oe.cd/cat)



## Key insights from OECD work on disruptive innovation and regulation

### Disruptive Innovation (2015)

**Disruptive innovations have the potential to fundamentally reshape markets.** They may come from either an existing or a new entrant, but generally occur in markets with entrenched and inefficient incumbents. A disruptor is able to scale up quickly with the help of digital technologies, and succeed in offering new ways to meet unmet consumer demand. They enhance competition by bypassing existing business models.

**At the same time, disruptive innovations may create significant challenges for regulators and law enforcement agencies – in fact, avoidance of regulatory framework may be core to a disruptor’s business model.**

- Regulatory frameworks may need to be reviewed when they risk preventing beneficial disruptive innovations from entering a market, or if they create competition distortions between regulated and unregulated firms. In some cases, the underlying objective of a given framework may no longer be relevant, or may be less important as a result of the innovations brought by the disruptor.
- Competition authority advocacy can be essential in identifying aspects of current regulatory frameworks that unnecessarily inhibit innovation and competition, and building a case for reforms. However, they may face challenges in reacting swiftly to developments in markets, finding the most effective way to advocate for competition, and identify ways to strike the right balance between different policy interests.

**Incumbents may respond to disruptive innovations by either seeking to innovate and out-compete the disruptor, acquire the disruptor, or engage in certain exclusionary strategies. Competition authority intervention may be needed in the case of acquisitions or exclusions that harm competition.**

📖 [Issues paper](#) 🌐 More resources: [www.oecd.org/daf/competition/disruptive-innovations-and-competition.htm](http://www.oecd.org/daf/competition/disruptive-innovations-and-competition.htm)



## Financial Markets (2015, 2019)

**Digital disruption is reshaping competition in the financial sector, with a range of innovations being offered by banking incumbents (transitioning increasingly to online services), FinTech firms, and large digital platforms. These innovations bring significant benefits to consumers in the form of new services, lower switching costs, easier multi-homing, and more transparency.**

- The response of incumbents has varied, in some cases taking the form of partnerships and co-operation with new innovative entrants, and in other cases taking the form of defensive moves and attempts to limit access to infrastructure by incumbents against FinTech firms. It remains to be seen, however, what impact the entry of large digital platform firms' entry will have on the market in the Western hemisphere.
- Regulatory frameworks in the sector must promote both financial stability and innovation, which can pose significant challenges. Some regulators have taken the approach of introducing regulatory sandboxes, which allows firm experimentation and a better understanding of how FinTech activities fit within existing regulatory frameworks.
- Some regulatory principles that should be considered in the wake of disruption in financial services are technology neutrality, transparency, and a level playing field with respect to infrastructure and taxation treatment, as well as prudential regulation.

**Financial markets experiencing disruption often exhibit certain characteristics, namely unduly high intermediation costs, the introduction of new technologies, the central role of trust, and network effects. Regulatory frameworks will have a significant effect on the development of these services, and thus careful consideration is needed to ensure they do not unduly restrict entry and insulate incumbent financial firms from competition. Some particular areas of innovation include:**

- Peer-to-peer lending, in which borrowers receive loans directly from individual lenders through a common platform. Looking ahead, peer-to-peer finance will create regulatory challenges in terms of consumer access, security and consumer protection without invasive oversight, and the availability of credit scoring information.
- Equity crowdfunding consists of public appeals to raise funds for a specific objective using crowdfunding platforms (for example used by SMEs to obtain capital). The regulation of crowdfunding can be justified given the risk of fraud, and project or platform failures. To address these concerns, regulations can take the form of restrictions on advertising, limiting investing to sophisticated investors, and due diligence requirements.
- Virtual currencies or cryptocurrencies are stores of value that can be traded between users. They generally feature limited issuance, use digital techniques for securing transactions, and may offer anonymity to traders. A range of regulatory challenges may arise from the use of virtual currencies, including the risk of security breaches, and the need for money laundering controls.



- Innovative payment as well as currency exchange solutions have also been introduced, offering significantly reduced intermediation costs and improved transaction features. However, these services also may give rise to regulatory concerns with respect to fraud and illegal activity.

 [Background note](#)  [Issues Note](#)  [Video](#)  More resources: [www.oecd.org/daf/competition/digital-disruption-in-financial-markets.htm](http://www.oecd.org/daf/competition/digital-disruption-in-financial-markets.htm); [www.oecd.org/daf/competition/competition-and-disruptive-innovation-financial-markets.htm](http://www.oecd.org/daf/competition/competition-and-disruptive-innovation-financial-markets.htm)

## Legal Services (2016)

**Despite traditional resistance to change in legal professions, pro-competitive “disruptive” innovations are beginning to transform legal services and the manner in which they are delivered.**

- Online service delivery is allowing both legal professionals and unlicensed providers to serve clients remotely while taking advantage of the scalability of digital platforms.
- Ranking and review information regarding legal professionals is becoming increasingly accessible, and is allowing clients to assess the quality of professionals before retaining them – a previously difficult proposition.
- The unbundling of services, partially driven by increasing client awareness and fee pressure, is transforming the distribution of tasks in legal services and ending traditional “black box” models of service delivery. As a result, standardised activities are being outsourced to low-cost providers (including unlicensed ones), and new billing models are being introduced.
- Automation is changing the nature, and volume, of tasks that legal professionals perform. Although the extent to which the work of legal professions can be automated is subject to debate, automated systems have been introduced which offer new capabilities and, in at least some instances, improved performance relative to legal professionals.

**As a result of these innovations and the new competition they bring, the regulatory framework in which legal professionals operate is under pressure.** The exclusivity enjoyed by legal professionals, and the precise scope of activities to which it applies, is becoming unclear as unlicensed entrants offer a widening range of services. Restrictions on the quantity of professionals that can operate in specified regions are being questioned at a time where the services they provide could easily be made available online. Further, legal professional self-regulators may be unable, or ill-suited, to identify accommodations that permit innovative entrants to serve consumers.

**Competition authorities can play a role in advocating for regulatory systems that reflect current market realities and ensure market access for pro-competitive disruptive innovations.** Such a role could include advising policymakers who may be seeking to balance the benefits of competition with other policy objectives such as consumer protection. This process will require consideration of the objectives of legal professional regulations, particularly those addressing market failure, as well as the current design of those regulations.

 [Issues paper](#)  More resources: [www.oecd.org/daf/competition/disruptive-innovations-in-legal-services.htm](http://www.oecd.org/daf/competition/disruptive-innovations-in-legal-services.htm)



## Taxi, Ride-sourcing and Ride-sharing Services (2018)


**Disruptive innovation in transportation sector changed the regulatory and competitive landscape dramatically, to the benefit of consumers.**


- In recent years, ride-sourcing and ride-sharing services have entered and quickly expanded their provision of competing services. The platform model has disrupted the traditional taxi and private hire vehicles markets and improved services for consumers
- While many features were introduced by new players, incumbents have often responded, for instance by introducing or signing up to their own digital applications with many of the same features.

**Taxi and private hire vehicle services are strictly regulated in many countries. At least some aspects of these regulatory frameworks are due for reassessment in light of recent innovations.**

- First, the pace of innovation in these markets has highlighted the importance of focusing on principles rather than the detailed rules when designing regulations. This is because more detailed rules may not be flexible enough to accommodate future innovations and developments.
- Second, supply constraints are common and are likely to restrict competition. It is unclear whether the original rationale for these constraints ever necessitated such a restriction, however the emergence of ride-sourcing and ride-sharing services has certainly underlined their harmful nature.
- Third, while ride-sourcing applications have increased price transparency and used dynamic pricing to improve availability for passengers, traditional taxis services are required to offer fixed prices and are often unable to offer a price estimate. While this restriction may overcome an asymmetric information problem when passengers hail a taxi on the street or from a rank, it restricts the ability of taxi drivers to compete for passengers hailing via an online application.
- Fourth, taxis and private hire vehicles are often obliged to comply with various service and safety requirements. While some requirements are excessively restrictive (thus creating entry barriers and increasing costs), the rationale for others regarding insurance and safety remains valid. New, competitive digital services may find alternative means to comply with certain policy objectives (such as ensuring a level of service accessibility for disabled passengers).

**There have been few merger or competition law cases regarding ride-sourcing and ride-sharing services.** However, as the new entrants become powerful established players, this may change and may present some interesting and challenging issues for competition authorities. For example, novel business models, the multi-sided nature of the market, and issues related to big data may pose potential challenges to competition authorities when investigating allegations of collusion, exclusion, excessive pricing and anti-competitive price discrimination claims.

 [Background note](#) > || [Videos](#)

 More resources: [www.oecd.org/daf/competition/taxis-and-ride-sharing-services.htm](http://www.oecd.org/daf/competition/taxis-and-ride-sharing-services.htm)



## Land Transport (2016)

**As a result of regulatory and technological developments, the land transport sector has seen significant changes to intra- and inter-modal competition. However, land transport services still suffer from significant pricing inefficiencies.**

**The promotion of competition in land transport must take into account technological developments affecting how customers access those transportation services, and work towards the removal of unjustified barriers to access.**

- Developments regarding the collection, processing and making available of data on transportation services have created possibilities for increased competition in land transport. The implementation of systems allowing for intermodal competition means that consumers will be better informed, that their choice set will expand, and should lead to increased competition.

 [Background note](#)  More resources: [www.oecd.org/daf/competition/competition-and-innovation-in-land-transport.htm](http://www.oecd.org/daf/competition/competition-and-innovation-in-land-transport.htm)

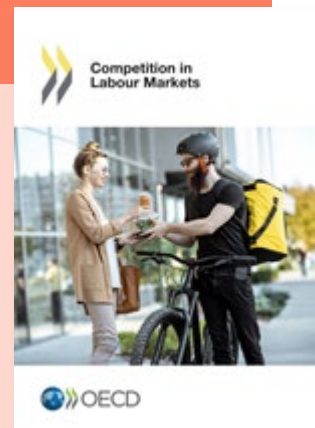
## Competition in Labour Markets (2019)

**The advent of the sharing economy brings both benefits and risks for platform workers and contractors.**

- On the one hand, it has increased output and utilisation rates, lifting the productivity of platform workers, and it has created more jobs with enhanced flexibility.
- On the other hand, the platform model has also put pressure on the nature of labour market demand, made jobs less secure and affected working conditions as well as the earnings of incumbent workers and contractors.

**Competition authorities' advocacy efforts can be an effective way to address the sources of monopsony power.**

- Key areas of advocacy can include measures to reduce switching costs between platforms (e.g. by ensuring portability of platform workers' rating to help improve their mobility across platforms) or increasing transparency on relevant information about employers (e.g. by promoting digital comparisons tools that could reduce search costs and facilitate switching).
- Competition agencies have several tools at their disposal for these advocacy efforts, including market studies whenever there are suspicions that the market is not working effectively.
- Competition agencies may also wish to analyse the particular features of a market in order to understand whether a competition law exemption for collective bargaining is justified by the need to countervail the exercise of monopsony power by digital platforms. They may



consider whether the limited bargaining power of platform workers has any effect in strengthening the intermediation power of platforms.

**To address monopsony power, competition authorities can have recourse to other non-enforcement tools, including ex post assessments of past merger decisions to study the impact of labour monopsony, or guidelines for HR professionals to detect and prevent competition law infringements relating to hiring and compensation decisions.**

 [Background note](#) ▷  [Video](#)  More resources: [www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm](http://www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm)

## Competition Issues in News Media and Digital Platforms (2021)

**The internet has fundamentally changed distribution and consumption of news, reducing costs for news publishers but also raising concerns for journalism.**

- The internet reduced costs of publishing and distributing news content, facilitated new entries and increased the geographic reach of news publishers. Consumers have also benefited from lower costs of accessing news.
- Large digital platforms have become unavoidable partners for a significant number of news publishers. Competitive dynamics between news publishers and large digital platforms have especially affected the formers' advertising revenue, thus threatening the sustainability of public interest journalism. This may have consequences for consumers in terms of quality and coverage of news, as well as broader consequences on pluralism and media concentration.

**Competition authorities and commentators have identified various digital platforms' practices that may raise competition concerns and have developed various theories of harm.**

- These include exploitation of market power to impose unfair prices or terms to news publishers for their content, exclusionary practices (e.g., refusal to deal, self-preferencing) harming news publishers in markets on which they horizontally compete such as digital advertising, or forced free riding on publishers' news content and related investments.

**There are significant differences across jurisdictions as to how theories of harm are pursued, in particular whether through abuse of dominance cases or other means such as market studies and new regulation.**

- Recent enforcement actions targeting digital platforms and their relationship with news publishers focussed on conduct undermining competition in digital advertising and affecting the ability of publishers to generate revenue through display advertising.
- Several jurisdictions have promoted or introduced new regulation to even up bargaining imbalance with the objective of getting more value to news content providers from digital distribution.

 [Background note](#) ▷  [Videos](#)  More resources: [www.oecd.org/daf/competition/competition-issues-in-news-media-and-digital-platforms.htm](http://www.oecd.org/daf/competition/competition-issues-in-news-media-and-digital-platforms.htm)





# Looking forward: adapting competition policy to the digit era

**D**igital markets have posed significant challenges for competition law and policy frameworks in recent years. The OECD's work in this area has highlighted that the core concepts, principles and economic foundation of competition policy are as relevant as ever in these markets. In fact, many well-established theories of harm and core concepts will be vital to ensure that digital markets remain dynamic and innovative. Anti-competitive horizontal mergers, agreements among competitors and vertical restraints can produce as much harm in digital markets as in traditional ones – in fact, network effects and strong economies of scale and scope may amplify this harm. Further, many competition law frameworks remain sufficiently flexible to tackle some of the novel theories of harm and unique market characteristics that emerge in digital markets.

At the same time, there is a growing consensus that at least some parts of the competition policy framework must be adjusted in response to digitalisation. Some proposals include:

- **Enhancing merger control frameworks**, including adjusting notification thresholds to capture anti-competitive acquisitions of emerging competitors, increasing the emphasis on innovation and dynamic competition issues, explicitly including digital-specific issues such as data access or intermediation power in merger legislation, and placing the burden of proof on merging parties to show the lack of competition harm in certain situations. Ex post assessments of past merger decisions have also been pointed to as an important tool to learn from past experience in digital markets as it accumulated.
- **Strengthening abuse of dominance (or monopolisation) enforcement**, in particular by shifting the burden onto dominant firms to show the procompetitive effects of certain types of conduct, and by using more interim measures to preserve competition while a case is ongoing.
- **Clear guidelines** to help firms understand the situations in which digital-specific competition concerns may arise, and how they will be analysed.
- **Enhancing the digital tools and expertise available to competition authorities**, given the complex nature of these markets and the conduct that may arise. Authorities are establishing dedicated teams focused on digital markets, and are experimenting with new digital resources such as the use of artificial intelligence to monitor remedy implementation.

- **Deeper international co-operation among competition authorities**, given the cross-border nature of digital markets and the common issues they pose.
- **Greater use of market studies to take a holistic view of competition problems in digital markets**, since they may emerge outside the context of a merger or enforcement case. Several authorities have used these tools to advocate for regulatory change and improve their knowledge in areas such as digital advertising, FinTech and patent assertion entities.

Beyond these ideas to strengthen existing competition policy frameworks, there has been a range of proposals seeking to create new ex ante regulatory regimes and legislative measures. These proposals reflect a view that existing frameworks may not capture the full range of competition problems that arise in digital markets, or that current enforcement processes are too slow or ineffective given the rapid pace evolution of these markets. Further, regulatory proposals also seek to recognise that competition concerns in digital markets, generally stemming from durable market power, may overlap with other policy concerns, such as fair trading, data protection and innovation, among others.

These proposals, and legislative measures to implement them, are rapidly developing, and will remain a focus of OECD work in the years to come. While many of the core objectives and concerns motivating these proposals are the same, there is a growing divergence in the precise approach taken, including:

- definitions of key concepts (for example what are referred to as “gatekeepers” in some jurisdictions)
- the range of prohibited conduct and the remedies available for non-compliance
- the nature of prohibitions (per se or subject to effects-based analysis)
- the institutional model for enforcement



Looking ahead, the gains from greater co-operation and co-ordination among competition policymakers in this area can be significant, both in terms of improving the effectiveness of the measures in question and reducing the compliance burden on firms from diverging approaches (particularly if there are attendant risks for innovation incentives).

## Key insights from OECD work on adapting competition policy to the digital era

### Competition Enforcement and Regulatory Alternatives (2021)

**Competition enforcement and regulation are closely related in many markets.** Regulation can follow from competition enforcement cases, particularly those that highlight gaps in regulatory frameworks. Regulation can also influence the scope of application of competition law, either through competition law exemptions, or through liberalisation processes that will require active competition law enforcement to be successful. The influence can also run in the other direction – competition law may provide concepts and approaches that can be usefully incorporated into sector regulatory frameworks.

**Reforms and proposals seeking to implement a specific regulatory framework in digital markets are inspired by perceived gaps in competition enforcement frameworks, and past enforcement case experience.** These proposals often borrow from existing competition law principles, but expand on them, for example by setting positive behavioural duties applicable without the need to establish anti-competitive effects.

 [Background note](#) ▷  [Videos](#)

 More resources: [www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives.htm](http://www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives.htm)



### Ex Ante Regulation and Competition in Digital markets (2021)

**A range of proposals and new legislative measures have been introduced which seek to implement ex ante regulation in certain digital markets.** These proposals reflect a concern that current competition law frameworks are not capturing the full range of competition problems that may emerge in these markets, and that there are additional objectives that can be pursued through regulation in digital markets. As a result, the distinction between competition policy measures and other policy objectives can be difficult to grasp in some cases.

- Promoting market contestability and addressing entrenched market power has emerged as a central theme of digital sector ex ante regulatory initiatives. In particular, many of these initiatives point to the need to address certain entry barriers, and empower consumers (for example by addressing switching costs).
- Fairness is another term applied with respect to many initiatives, although the precise definition of the term varies (or is not provided in the current text of many proposals). The term fairness has been referred to both in the context of terms offered to consumers, and



to the relationship between certain digital firms with market power and the firms with which they have a business relationship (in particular downstream firms relying on a digital platform or complementors in a product ecosystem). The fairness objectives in these initiatives are distinct from the traditional concerns of competition law, although they do exhibit some overlaps (for example, in terms of a particular attention to market power).

**Many ex ante regulatory initiatives seek to focus on a particular set of firms that are perceived as having a particular ability to harm competition.** The terminology and potentially focus of these measures varies among jurisdictions, from “gatekeepers” to “undertakings of significance to competition across markets” to firms with “strategic market status”, among others. Similarly, the identification criteria and designation processes vary across jurisdictions.

- These provisions reflect a desire to limit unnecessary regulatory burdens on smaller firms, and focus on particular vertical or conglomerate concerns. Notably, this designation differs from the concept of dominance used in some jurisdictions, which can reflect a desire to address conduct from firms that may not meet the definition of dominance, or to address misconduct without needing to resort to abuse of dominance enforcement and related procedural requirements.

**There is also variation in terms of the mechanism of implementation of ex ante regulation, which can take the form of either per se obligations or prohibitions involving an assessment of impacts. In addition, measures may either be tailored to specific firms, for example with a firm-specific code of conduct, or applied as such to designated firms in a given sector.**

**The range of measures contained in ex ante regulatory initiatives varies significantly across jurisdictions, and can include:**

- **Measures to address data-related concerns and mitigate the risk of exclusionary practices**, including data portability, interoperability, prohibitions on combining certain datasets (in the case of vertical or conglomerate business models), and obligations to grant access to certain datasets.
- **Measures to address other digital business practices that may amount to exploitative conducts, exclusion or anti-competitive raising of rivals’ costs**, including measures regarding self-preferencing, tying and bundling, and most-favoured nation clauses or across-platform parity agreements.
- **Measures setting out transparency or fair business practice obligations for both consumers and business partners**, for instance with respect to algorithms used by platforms and advertising business practices.
- **Additional ex ante merger requirements**, for example the obligation of certain designated firms to inform the digital regulator or competition authority of all of their acquisitions.



📖 [Background note](#) ▶ [Videos](#) 🌐 More resources: [www.oecd.org/daf/competition/ex-ante-regulation-and-competition-in-digital-markets.htm](http://www.oecd.org/daf/competition/ex-ante-regulation-and-competition-in-digital-markets.htm)

## Competition Economics of Digital Ecosystems (2020)

**The competition issues that emerge with respect to digital product ecosystems may be difficult to address using traditional antitrust tools, and may require ex ante regulation. In particular, the inherent nature of ecosystems (including strong network effects and economies of scope and scale) may lead to competition concerns even if market participants have not engaged in anti-competitive conduct.**

- While there are questions about the risks of intervention in digital ecosystem markets, there are also significant risks associated with inaction, given the potential for durable and incontestable market power to emerge.

▷ || [Videos](#)  More resources: [www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm](http://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm)

## Blockchain and Competition Policy (2018)

**There are also opportunities for competition agencies from blockchain technology.** In particular the possibility of an agency having its own node on a private industry blockchain might allow them to improve the effectiveness and efficiency of their investigations. For instance, agencies could receive real-time information on the market at zero marginal cost to market participants, allowing them to overcome the asymmetry of information that exists in most markets. For example they might monitor market outcomes, adherence to commitments, collect data for cases, and screen for suspicious patterns. It may therefore be something that agencies want to ask for in the design protocols of private industry specific blockchains. Another possibility is that blockchain technology might offer agencies new options when they are looking for remedies in markets that they have studied.

 [Issues paper](#)  [Publication](#) ▷ || [Videos](#)

 More resources: [www.oecd.org/daf/competition/blockchain-and-competition-policy.htm](http://www.oecd.org/daf/competition/blockchain-and-competition-policy.htm)



# Annex A. List of OECD resources related to digital competition

## Chronological order

### 2021

#### **Competition Enforcement and Regulatory Alternatives**

[www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives.htm](http://www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives.htm)

#### **Competition Issues in News Media and Digital Platforms (2021)**

[www.oecd.org/daf/competition/competition-issues-in-news-media-and-digital-platforms.htm](http://www.oecd.org/daf/competition/competition-issues-in-news-media-and-digital-platforms.htm)

#### **Data Portability, Interoperability and Competition**

[www.oecd.org/daf/competition/data-portability-interoperability-and-competition.htm](http://www.oecd.org/daf/competition/data-portability-interoperability-and-competition.htm)

#### **Ex Ante Regulation and Competition in Digital markets**

[www.oecd.org/daf/competition/ex-ante-regulation-and-competition-in-digital-markets.htm](http://www.oecd.org/daf/competition/ex-ante-regulation-and-competition-in-digital-markets.htm)

#### **The Concept of Potential Competition**

[www.oecd.org/daf/competition/the-concept-of-potential-competition.htm](http://www.oecd.org/daf/competition/the-concept-of-potential-competition.htm)

### 2020

#### **Abuse of Dominance in Digital Markets**

[www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm](http://www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets.htm)

#### **Digital Evidence Gathering in Cartel Investigations**

[www.oecd.org/competition/latinamerica/2020-latin-american-and-caribbean-competition-forum.htm](http://www.oecd.org/competition/latinamerica/2020-latin-american-and-caribbean-competition-forum.htm)

#### **Line of Business Restrictions as a Solution to Competition Concerns**

[www.oecd.org/daf/competition/line-of-business-restrictions-as-a-solution-to-competition-concerns.htm](http://www.oecd.org/daf/competition/line-of-business-restrictions-as-a-solution-to-competition-concerns.htm)

#### **Competition Economics of Digital Ecosystems**

[www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm](http://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm)

#### **Competition in Digital Advertising Markets**

[www.oecd.org/daf/competition/competition-in-digital-advertising-markets.htm](http://www.oecd.org/daf/competition/competition-in-digital-advertising-markets.htm)

#### **Consumer Data Rights and Competition**

[www.oecd.org/daf/competition/consumer-data-rights-and-competition.htm](http://www.oecd.org/daf/competition/consumer-data-rights-and-competition.htm)

#### **Conglomerate Effects of Mergers**

[www.oecd.org/daf/competition/conglomerate-effects-of-mergers.htm](http://www.oecd.org/daf/competition/conglomerate-effects-of-mergers.htm)

#### **Start-ups, Killer Acquisitions and Merger Control**

[www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control.htm](http://www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control.htm)

## 2019

### **Merger Control in Dynamic Markets**

[www.oecd.org/daf/competition/merger-control-in-dynamic-markets.htm](http://www.oecd.org/daf/competition/merger-control-in-dynamic-markets.htm)

### **Digital Disruption in Financial Markets**

[www.oecd.org/daf/competition/digital-disruption-in-financial-markets.htm](http://www.oecd.org/daf/competition/digital-disruption-in-financial-markets.htm)

### **Vertical Mergers in the Technology, Media and Telecom Sector**

[www.oecd.org/daf/competition/vertical-mergers-in-the-technology-media-and-telecom-sector.htm](http://www.oecd.org/daf/competition/vertical-mergers-in-the-technology-media-and-telecom-sector.htm)

### **Competition Issues in Labour Markets**

[www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm](http://www.oecd.org/daf/competition/competition-concerns-in-labour-markets.htm)

### **Competition For-the-market**

[www.oecd.org/daf/competition/competition-for-the-market.htm](http://www.oecd.org/daf/competition/competition-for-the-market.htm)

### **Licensing of IP Rights and Competition Law**

[www.oecd.org/daf/competition/licensing-of-ip-rights-and-competition-law.htm](http://www.oecd.org/daf/competition/licensing-of-ip-rights-and-competition-law.htm)

### **Practical Approaches to Assessing Digital Platform Markets for Competition Law Enforcement**

[www.oecd.org/competition/latinamerica/2019-latin-american-and-caribbean-competition-forum.htm](http://www.oecd.org/competition/latinamerica/2019-latin-american-and-caribbean-competition-forum.htm)

### **Hub-and-spoke Arrangements**

[www.oecd.org/daf/competition/hub-and-spoke-arrangements.htm](http://www.oecd.org/daf/competition/hub-and-spoke-arrangements.htm)

## 2018

### **Quality Considerations in the Zero-price Economy**

[www.oecd.org/daf/competition/quality-considerations-in-the-zero-price-economy.htm](http://www.oecd.org/daf/competition/quality-considerations-in-the-zero-price-economy.htm)

### **E-commerce Implications for Competition Policy**

[www.oecd.org/daf/competition/e-commerce-implications-for-competition-policy.htm](http://www.oecd.org/daf/competition/e-commerce-implications-for-competition-policy.htm)

### **Market Concentration**

[www.oecd.org/daf/competition/market-concentration.htm](http://www.oecd.org/daf/competition/market-concentration.htm)

### **Blockchain and Competition Policy**

[www.oecd.org/daf/competition/blockchain-and-competition-policy.htm](http://www.oecd.org/daf/competition/blockchain-and-competition-policy.htm)

### **Personalised Pricing**

[www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm](http://www.oecd.org/daf/competition/personalised-pricing-in-the-digital-era.htm)

### **Consumer-facing Remedies**

[www.oecd.org/daf/competition/consumer-facing-remedies.htm](http://www.oecd.org/daf/competition/consumer-facing-remedies.htm)

### **Rethinking Antitrust Tools for Multi-sided Platforms**

[www.oecd.org/daf/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm](http://www.oecd.org/daf/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm)

## 2017

### Algorithms and Collusion

[www.oecd.org/daf/competition/algorithms-and-collusion.htm](http://www.oecd.org/daf/competition/algorithms-and-collusion.htm)

### Radical Innovation in the Electricity Sector

[www.oecd.org/daf/competition/radical-innovation-in-the-electricity-sector.htm](http://www.oecd.org/daf/competition/radical-innovation-in-the-electricity-sector.htm)

## 2016

### Price Discrimination and Competition

[www.oecd.org/daf/competition/price-discrimination.htm](http://www.oecd.org/daf/competition/price-discrimination.htm)

### Disruptive Innovations in Legal Services

[www.oecd.org/daf/competition/disruptive-innovations-in-legal-services.htm](http://www.oecd.org/daf/competition/disruptive-innovations-in-legal-services.htm)

### Competition and Innovation in Land Transport

[www.oecd.org/daf/competition/competition-and-innovation-in-land-transport.htm](http://www.oecd.org/daf/competition/competition-and-innovation-in-land-transport.htm)

### Geographic Market Definition Across National Borders

[www.oecd.org/daf/competition/geographic-market-definition.htm](http://www.oecd.org/daf/competition/geographic-market-definition.htm)

### Big Data

[www.oecd.org/daf/competition/big-data-bringing-competition-policy-to-the-digital-era.htm](http://www.oecd.org/daf/competition/big-data-bringing-competition-policy-to-the-digital-era.htm)

## 2015

### Disruptive Innovations

[www.oecd.org/daf/competition/disruptive-innovations-and-competition.htm](http://www.oecd.org/daf/competition/disruptive-innovations-and-competition.htm)

### Competition and Cross Platform Parity Agreements

[www.oecd.org/daf/competition/competition-cross-platform-parity.htm](http://www.oecd.org/daf/competition/competition-cross-platform-parity.htm)

### The Impact of Disruptive Innovations on Competition Law Enforcement

[www.oecd.org/competition/globalforum/disruptive-innovations-competition-law-enforcement.htm](http://www.oecd.org/competition/globalforum/disruptive-innovations-competition-law-enforcement.htm)

### Competition and Disruptive Innovation in Financial Markets

[www.oecd.org/daf/competition/competition-and-disruptive-innovation-financial-markets.htm](http://www.oecd.org/daf/competition/competition-and-disruptive-innovation-financial-markets.htm)

## 2013

### Vertical Restraints for Online Sales

[www.oecd.org/daf/competition/VerticalRestraintsForOnlineSales2013.pdf](http://www.oecd.org/daf/competition/VerticalRestraintsForOnlineSales2013.pdf)

## 2012

### The Digital Economy

[www.oecd.org/daf/competition/The-Digital-Economy-2012.pdf](http://www.oecd.org/daf/competition/The-Digital-Economy-2012.pdf)



## Topic

### A

[Abuse of Dominance, Digital Markets \(2021\)](#)  
[Across Platform Parity Agreements \(2015\)](#)  
[Advertising Markets, Digital \(2020\)](#)  
[Algorithms and Collusion \(2017\)](#)  
[Assessing Digital Markets for Competition Law Enforcement, Practical Approaches \(2019\)](#)

### B

[Big Data \(2016\)](#)  
[Blockchain \(2018\)](#)

### C

[Competition For-the-market \(2019\)](#)  
[Conglomerate Effects of Mergers \(2020\)](#)  
[Consumer Data Rights \(2020\)](#)  
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[Digital Economy \(2012\)](#)  
[Disruptive Innovations \(2015\)](#)  
[Disruptive Innovations on Enforcement, Impact \(2015\)](#)

### E

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### F

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### H

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[Multi-sided Platforms \(2018\)](#)

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[Non-price Effects of Mergers \(2018\)](#)

**P**

[Personalised Pricing \(2018\)](#)

[Platform Markets, Assessment of Digital \(2019\)](#)

[Potential Competition, Concept \(2021\)](#)

[Price Discrimination \(2016\)](#)

**S**

[Start-ups, Killer Acquisitions and Merger Control \(2020\)](#)

**T**

[Taxi, ride-sourcing and ride-sharing services \(2018\)](#)

**V**

[Vertical Restraints for Online Sales \(2013\)](#)

[Vertical Mergers in the Technology, Media and Telecom Sector \(2019\)](#)

**Z**

[Zero-price Economy, Quality Considerations \(2018\)](#)

# Other references

- Andrews, D., C. Criscuolo and P. Gal (2015), *Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries*,  
<https://www.oecd.org/economy/growth/Frontier-Firms-Technology-Diffusion-and-Public-Policy-Micro-Evidence-from-OECD-Countries.pdf>. [31]
- Bajgar, M. et al. (2019), "Industry Concentration in Europe and North America", *OECD Productivity Working Papers* 2019-18, <https://doi.org/10.1787/2ff98246-en>. [24]
- Bourreau, M. (2020), *Some Economics of Digital Ecosystems – Note for the OECD Hearing on Competition Economics of Digital Ecosystems*,  
[https://one.oecd.org/document/DAF/COMP/WD\(2020\)89/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2020)89/en/pdf). [21]
- Calvino, F. and C. Criscuolo (2019), "Business dynamics and digitalisation", *OECD Science, Technology and Industry Policy Papers* 62, <https://doi.org/10.1787/6e0b011a-en>. [25]
- OECD (2021), *Data portability, interoperability and digital platform competition*, *OECD Competition Committee Discussion Paper*, <https://www.oecd.org/daf/competition/data-portability-interoperability-and-digital-platform-competition-2021.pdf>. [17]
- OECD (2021), *Mapping data portability initiatives, opportunities and challenges*, OECD Publishing, Paris, <https://doi.org/10.1787/a6edfab2-en>. [8]
- OECD (2020), *A Roadmap Toward a Common Framework for Measuring the Digital Economy: Report for the G20 Digital Economy Task Force*,  
<https://www.oecd.org/digital/ieconomy/roadmap-toward-a-common-framework-for-measuring-the-digital-economy.pdf>. [9]
- OECD (2020), *Abuse of dominance in digital markets: Background note by the Secretariat*,  
<http://www.oecd.org/daf/competition/abuse-of-dominance-in-digital-markets-2020.pdf>. [12]
- OECD (2020), *Conglomerate Effects of Mergers - Background note by the Secretariat*,  
[https://one.oecd.org/document/DAF/COMP\(2020\)2/en/pdf](https://one.oecd.org/document/DAF/COMP(2020)2/en/pdf). [5]
- OECD (2020), *Consumer Data Rights and Competition: Background note by the Secretariat*,  
[https://one.oecd.org/document/DAF/COMP\(2020\)1/en/pdf](https://one.oecd.org/document/DAF/COMP(2020)1/en/pdf). [6]
- OECD (2020), *Digital advertising markets: Background note by the Secretariat*,  
<https://www.oecd.org/daf/competition/competition-in-digital-advertising-markets-2020.pdf>. [33]
- OECD (2020), *Executive Summary of the Competition Committee Roundtable on Conglomerate Effects of Mergers*,  
[https://one.oecd.org/document/DAF/COMP/M\(2020\)1/ANN2/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2020)1/ANN2/FINAL/en/pdf). [23]

- OECD (2020), *Line of Business Restrictions: Background note by the Secretariat*, [18]  
[https://one.oecd.org/document/DAF/COMP/WP2\(2020\)1/en/pdf](https://one.oecd.org/document/DAF/COMP/WP2(2020)1/en/pdf).
- OECD (2020), *Start-ups, killer acquisitions and merger control: Background note by the Secretariat*, [32]  
<https://www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control-2020.pdf>.
- OECD (2019), *Executive Summary of the Competition Committee roundtable on Hub-and-Spoke arrangements*, [16]  
[https://one.oecd.org/document/DAF/COMP/M\(2019\)2/ANN4/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2019)2/ANN4/FINAL/en/pdf).
- OECD (2019), *Hub-and-Spoke Arrangements: Background Note by the Secretariat*, [19]  
[https://one.oecd.org/document/DAF/COMP\(2019\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2019)14/en/pdf).
- OECD (2019), *Merger Control in Dynamic Markets: Background note by the Secretariat*, [15]  
<http://www.oecd.org/daf/competition/merger-control-in-dynamic-markets-2020.pdf>.
- OECD (2019), *Practical approaches to assessing digital platform markets for competition law enforcement: Background note by the Secretariat for the Latin American and Caribbean Competition Forum*, [7]  
[https://one.oecd.org/document/DAF/COMP/LACF\(2019\)4/en/pdf](https://one.oecd.org/document/DAF/COMP/LACF(2019)4/en/pdf).
- OECD (2018), *Considering non-price effects in merger control: Background note by the Secretariat*, [26]  
[https://one.oecd.org/document/DAF/COMP\(2018\)2/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)2/en/pdf).
- OECD (2018), *Executive Summary of the Competition Committee Hearing on Blockchain and Competition Policy*, [4]  
[https://one.oecd.org/document/DAF/COMP/M\(2018\)1/ANN8/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2018)1/ANN8/FINAL/en/pdf).
- OECD (2018), *Executive Summary of the Competition Committee Roundtable on Algorithms and Collusion*, [2]  
[https://one.oecd.org/document/DAF/COMP/M\(2017\)1/ANN3/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2017)1/ANN3/FINAL/en/pdf).
- OECD (2018), *Executive Summary of the Roundtable on Implications of E-commerce for Competition Policy*, [11]  
[https://one.oecd.org/document/DAF/COMP/M\(2018\)1/ANN3/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2018)1/ANN3/FINAL/en/pdf).
- OECD (2018), *Implications of E-commerce for Competition Policy - Background Note by the Secretariat*, [1]  
[https://one.oecd.org/document/DAF/COMP\(2018\)3/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)3/en/pdf).
- OECD (2018), *Market Concentration: Issues paper by the Secretariat*, [27]  
[https://one.oecd.org/document/DAF/COMP/WD\(2018\)46/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2018)46/en/pdf).
- OECD (2018), *Personalised Pricing in the Digital Era: Background note by the Secretariat*, [28]  
[https://one.oecd.org/document/DAF/COMP\(2018\)13/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)13/en/pdf).
- OECD (2018), *Quality Considerations in Zero-Price Markets: Background note by the Secretariat*, [29]  
[https://one.oecd.org/document/DAF/COMP\(2018\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2018)14/en/pdf).
- OECD (2018), *Rethinking Antitrust Tools for Multi-Sided Platforms*, [20]  
<https://www.oecd.org/daf/competition/Rethinking-antitrust-tools-for-multi-sided-platforms-2018.pdf>.

- OECD (2017), *Algorithms and Collusion: Background note by the Secretariat*, [13]  
<https://www.oecd.org/daf/competition/Algorithms-and-collusion-competition-policy-in-the-digital-age.pdf>.
- OECD (2017), *Executive Summary of the Competition Committee Hearing on Disruptive Innovation*, [10]  
[https://one.oecd.org/document/DAF/COMP/M\(2015\)1/ANN8/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2015)1/ANN8/FINAL/en/pdf).
- OECD (2016), *Big data: Bringing competition policy to the digital era: Background paper by the Secretariat*, [14]  
[https://one.oecd.org/document/DAF/COMP\(2016\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2016)14/en/pdf).
- OECD (2016), *Executive Summary of the Competition Committee Roundtable on Big Data*, [3]  
[https://one.oecd.org/document/DAF/COMP/M\(2016\)2/ANN4/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2016)2/ANN4/FINAL/en/pdf).
- OECD (2008), *Executive Summary of the Competition Committee Roundtable on Resale Price Maintenance*, [22]  
<https://www.oecd.org/daf/competition/43835526.pdf>.
- OECD (n.d.), *Glossary of Statistical Terms*, <https://stats.oecd.org/glossary/> (accessed on 2021). [30]





[www.oecd.org/competition](http://www.oecd.org/competition)

