Virtual Competition:
Online Platforms, Consumer Outcomes and Competition in Insurance

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The Geneva Association

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Virtual Competition: Online Platforms, Consumer Outcomes and Competition in Insurance

Benno Keller, Special Advisor, The Geneva Association

Prepared under the overall guidance of Christian Schmidt, Director Digitalization, The Geneva Association

The Geneva Association

Talstrasse 70, CH-8001 Zurich | Tel: +41 44 200 49 00 | Fax: +41 44 200 49 99

secretariat@genevaassociation.org   www.genevaassociation.org

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Acknowledgements

Foreword

Anna Maria D'Hulster

Secretary General,
The Geneva Association

Online platforms are proliferating in many countries and many sectors of the economy, promising large economic and societal benefits. They bring together vast communities of buyers and sellers, consumers and advertisers, and allow interaction between them. They can create markets of enormous scale and enable collaboration between companies from different economic sectors that can result in new product and service developments. The World Economic Forum estimates that online platforms could unlock USD 10 trillion of value for business and the wider society over the next 10 years.

In insurance, online platforms have the potential to enhance market transparency and consumer convenience, thereby contributing to reducing informational asymmetries between insurers and policyholders. By making information easily accessible, they may help to overcome known behavioural biases of insurance buyers. Moreover, through the use of big data analytics, artificial intelligence and cloud computing, online platforms could enable the role of insurance to develop from one primarily concerned with loss indemnification to a broader advisory service for insureds on how to prevent, mitigate and manage risks.

New technologies generally and online platforms in particular present opportunities but also give rise to new challenges that need to be addressed by insurers and society. One challenge is related to consumer protection and competition. Inherent features of online platforms such as network effects and data-driven economies of scope may ultimately lead to large platforms which act as gateways for consumers. Insurers could become dependent on a small number of platforms to sell their products, and competition would ultimately be reduced—to the detriment of consumers. Further, the very nature of online platforms can trigger concerns relating to privacy and trust. Consumers need to be assured that the information provided by online platforms is in their best interests and that their privacy is protected. Inaccurate or biased information, search results and rankings as well as loss of privacy represent major risks for consumers.

This report focuses on the increasing importance of online platforms and their implications for the economic and societal role of insurance. It aims to contribute to an informed and fact-based debate by assessing the impact of online platforms on new business models in insurance, consumer outcomes, and competition.

1. Executive summary

The role of online platforms in the insurance industry is likely to increase in the foreseeable future, driven by technological advances and shifting customer expectations. Online platforms have been growing rapidly and have gained large market shares in a growing number of industries.

The emerging platform economy promises large economic and societal benefits. In insurance, online platforms have the potential to enhance market transparency and customer convenience, thereby contributing to reducing informational asymmetries between insurers and policyholders and helping to overcome known behavioural biases of insurance buyers. Better understanding of risks through the use of big data analytics by online platforms may help to expand insurance cover and allow for new and innovative insurance that is focused on predicting and preventing risks.

At the same time, however, online platforms may pose certain risks for consumers. As a result, trade-offs between potential benefits and dangers may need to be considered. Furthermore, potential benefits and risks to consumers will depend on the impact of the emerging platform economy on the future competitive landscape. Network effects and data-driven economies favour the emergence of large platforms that are able to gain large market shares. Policymakers therefore need to balance a difficult trade-off between efficiency arising from network effects and (data-driven) economies of scope on the one hand, and the potential emergence of dominant platforms that act as gatekeepers for consumers on the other.

This report identifies key trade-offs that may be affected by the increasing importance of online platforms in insurance and identifies key policy questions that may arise as a result of this development.

2. Introduction

Online platforms and digital ecosystem[1] such as Amazon, Etsy, Facebook, Google, Salesforce, Airbnb, Alibaba and Uber are playing an increasingly important role in the economy. Internet traffic on 176 platform companies identified by the Center of Global Enterprise accounted for 25% of all Internet traffic worldwide at the end of 2015. Traffic over these platforms increased by 40% between 2010 and 2015.[2] Their total market capitalisation exceeded USD 4.3 trillion in 2015.[3] By 2025, 30% of global GDP will be represented by digital ecosystems, according to research by McKinsey.[4]

Figure 1: Regional share of market capitalisation of platform companies

72%	■ North America
22%	■ Asia
4%	■ Europe
2%	■ Africa and Latin America
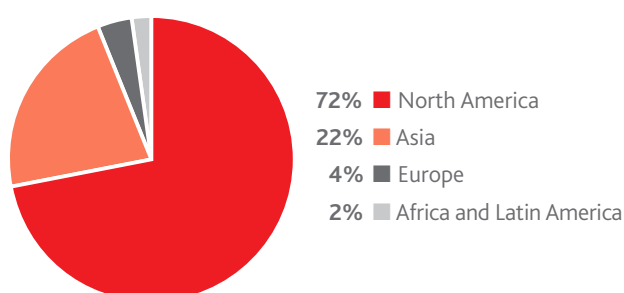
Source: Peter C. Evans and Annabelle Gawer (2016): "The Rise of the Platform Enterprise: A global survey". The Center for Global Enterprise, January 2016.

Governments around the world have recognised the potential of the platform economy to foster economic growth.[5] The World Economic Forum estimates that online platforms could unlock USD 10 trillion of value for business and wider society over the next 10 years.[6]

Over the past few years, the debate on online platforms has increasingly shifted towards the implications of the platform economy for individuals' privacy. At the same time, the large and rapidly growing market share of large online platforms such as Amazon has raised concerns about the rise of online platforms for competition.

This report focuses on the increasing importance of online platforms and their effects on the insurance industry. More specifically, it assesses the implications of the emerging platform economy on insurance customers and competition in the insurance market, and discusses relevant implications for public policy.

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1   The terms platform and ecosystem are often used interchangeably. There are, however, differences between these two concepts (see glossary for a definition of terms). The term ecosystem is often used in the context of the Internet of Things and for platforms offering a broad scope of services across traditional industry boundaries and involving a large number of different players. In this report, we use the term platform in a broad sense to include ecosystems.

2   Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological Studies Digital Economy Working Paper 2016/05, JRC101501.

3   Evans, P.C. and Gawer, A. (2016) *'The Rise of the Platform Enterprise: A Global Survey'*, The Emerging Platform Economy Series, No. 1, January 2016.

4   McKinsey (2018) *'The rise of ecosystems and platforms: What role can insurance play and how can they get started?'*, Video, July 2018.

5   The European Commission, for example, has launched several initiatives within its Digital Single Markets strategy to "foster an environment in which online platform ecosystems thrive". See https://ec.europa.eu/digital-single-market/en/online-platforms-digital-single-market.

6   World Economic Forum (2017) *'Unlocking B2B Platform Value'*, White Paper, March 2017.

3. Online platforms and new business models in insurance

Platforms differ from more traditional business models in that they allow for interactions between different user groups such as buyers, sellers, consumers, advertisers and other stakeholders (see Box 1). Platforms typically earn revenue by charging fees for brokering transactions and/or by charging advertisers fees to gain access to the platform users. For example, search engines charge advertisers for priority ranking in their paid search list. Some platform owners retain a commission out of the fee that the buyer pays to their sellers. Most platforms rent out space so that advertisers can reach the users.[7]

Online platforms create value by reshaping how industries are defined, how participants interact, and how stakeholders' needs are met.[8] In doing so, they blur traditional boundaries between industries and between producers and consumers. They move the economy beyond narrowly defined industries built around large, vertically integrated and mainly "self-contained" corporations. In this process, traditional value chains are increasingly morphing into complex value webs with agile and variable architectures.

An important feature of platforms is the network effect between different user groups: the value one group of users derives from the platform increases with the size of another group of users.[9] For example, the higher the number of users of a social media platform, the higher the value of the platform for advertisers.[10]

Another key feature of online platforms is their ability to observe all interactions between user groups over the platform. A platform operator has an informational advantage over platform suppliers, as the latter can only observe their own transactions.[11] Platforms typically use machine learning to generate insights about users' behaviour; such insights serve as a basis for identifying target customers' needs, both current and future. The informational advantage of a platform may thus create economic efficiencies in terms of economies of scope in data collection and analysis.[12]

Box 1: Types of platform participants

Platform operator: Defines the standards and conditions for the participation on the platform and may collect data on interactions over the platform.

Platform user: Individuals using the platform to purchase or exchange goods or services, or to interact with other users and share content.

Platform supplier: Provides goods or services purchased by users over the platform.

Advertisers: Purchase advertisement on the platform to target specific users.

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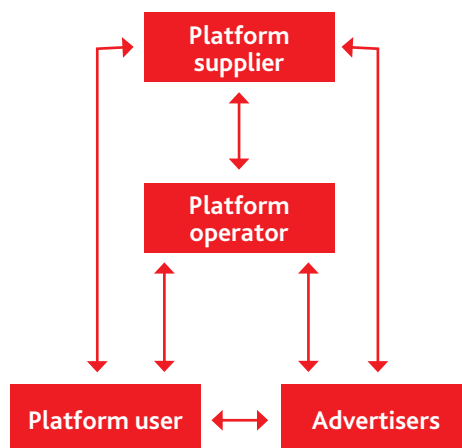
7   Often the fee is linked to the number of clicks garnered on the ad (pay-per-click) or, less commonly, when the ad is displayed (cost per impression).
8   World Economic Forum (2017) *'Unlocking B2B Platform Value'*, White Paper, March 2017.
9   See e.g. Rochet, J.-C. and Tirole, J. (2003) *'Platform Competition in Two-sided Markets'*, Journal of the European Economic Association 1(4): 990-1029.
10   In addition to such cross-platform network effects, there may also be direct network effects. These arise if the value a user derives from the network increases with the number of other users of the same group. In the case of social media platforms, for example, users benefit from a large number of other users.
11   The "one-way mirror" metaphor captures this situation nicely, see Pasquale, F. (2015) *'The Black Box Society: The Secret Algorithms That Control Money and Information'*, Princeton University Press.
12   Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological studies Digital Economy Working Paper 2016/05. JRC101501.

Network effects and data-driven economies of scope have important implications for market dynamics and competition (see Box 2).

<div style="border:1px solid red">

Box 2: Network effects, data-driven economies of scope, and the nature of competition

A specific feature of markets characterised by the presence of direct network effects is that they exhibit critical mass.[13] Direct (positive) network effects means that the value a user derives from the platform increases with the number of other users. Once a critical mass point is reached, the number of existing users is large enough to attract other users to the platform, and the platform enters a phase of rapid and self-sustained growth. As the platform grows, its value for users increases further, attracting additional users to the platform until a saturation point is reached. Network effects hence favour the emergence of large market players who act as gatekeepers for consumers.[14]

This leads to a 'winner-takes-all' market dynamic and shifts competition from *within* the market to competition *for* the market. Under these conditions, it is a rational strategy to subsidise users (e.g. by providing services to certain user groups for free) until the platform reaches its critical mass. A strong focus on growing the user base, even at the expense of profit, to 'capture' a market seems to lie at the heart of many large platforms' business models such as Amazon, for example.[15] The effects of economies of scope are similar to those of network effects in that a broader user base allows platforms to learn, improving their algorithms and products.

Platforms often start out as narrow-purpose platforms, expanding their scope as they attract more users and developing into complex ecosystems that act as a single gateway to a broad range of multi-industry products and services, so that the consumer never has to leave the ecosystem. Amazon, for example, started out as an online marketplace and evolved into a complex ecosystem as it entered into logistics, finance, content production, manufacturing, and cloud computing.

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Online platforms are playing an increasingly important role in insurance. Table 1 provides an overview of common platforms relevant to insurance.[16, 17] Some of these platforms, such as digital comparison tools (DCTs) have existed in some markets for many years and play an important role in insurance distribution. In the U.K., for example, over half of motor insurance policies are sold via digital comparison tools.[18] Overall, the importance of platforms in insurance is likely to increase due to the deployment of new technologies and shifting consumer expectations. A global consumer survey (unpublished) by The Geneva Association and Edelman Intelligence revealed that 60% of respondents would go online to look for information about insurance. Platforms such as Google, Amazon or Alibaba have entered into agreements with insurance companies or are otherwise weighing up entrance to the insurance space.

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13   Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological studies Digital Economy Working Paper 2016/05. JRC101501.

14   Google, for example, has a global search engine market share of almost 90%. Google and Facebook account for more than 60% of global digital advertisement revenue. Estimates by advertising research company WARC suggest that these two companies have a market share of around 25% of global media advertising worldwide.

15   Khan, L.M. (2017) *'Amazon's Antitrust Paradox'*, The Yale Law Journal 126(3).

16   Some platforms are organised as independent organisations or industry co-operations, others are owned by an insurance group (e.g. Ping An) or by companies outside of the insurance industry (e.g. Alibaba). So far, most platforms focus on non-life insurance, as life insurance products are typically more complex. However, the basic arguments in this report apply equally to life insurance platforms.

17   A more detailed overview of different types of platforms and ecosystems is provided in the appendix.

18   Competition and Markets Authority (2017) *'Digital comparison tools market study'*, 26 September 2017.

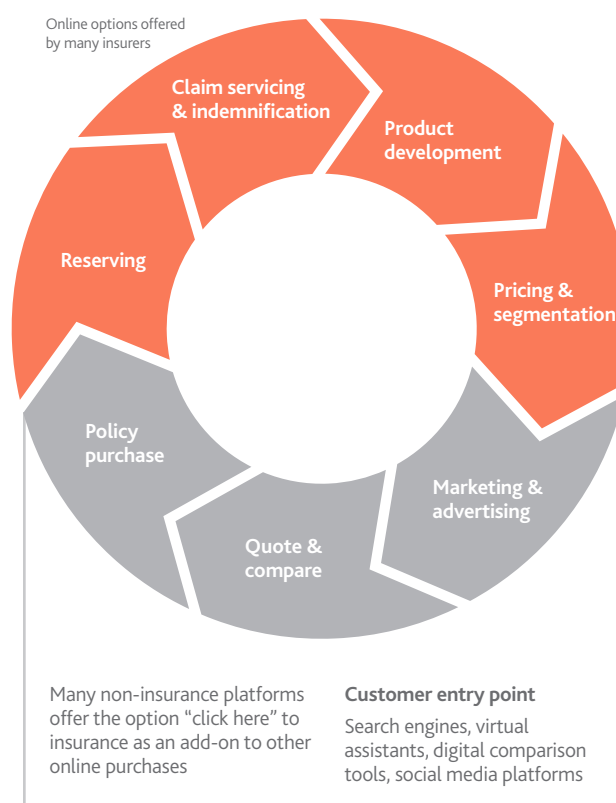*Table 1: Online platforms with relevance for the insurance industry*

	Search engines and virtual assistants	Digital comparison tools (DCTs)	E-commerce and sharing economy platforms	Social media platforms	Digital ecosystems	Peer-to-peer insurance platforms
Relationship between platform and insurer	Insurers buy advertise-ment on the platform	Participating insurers receive leads from the platform	Insurer provides insurance to platform users	Insurer buys advertisement as well as in-sights from data analytics (e.g. customer seg-mentation) from the platform)	Insurers provide insurance to ecosystem participants	Insurers provide (re)insurance to platform
Remuneration of platform	Fees for advertising	Variety of different remuneration models (typically a commission for a lead)	Typically a commission as a percentage of premium	Fees	Variety of different remuneration models	(Re)insurance premium
Ability to observe insurance transaction	No	Yes (if DCT is offered)	Yes	No	Yes	Yes
Platform offers only insurance	No	Typically yes	No	No	No	Yes
Policyholder relationship owned by	Insurer	Platform	Platform	Insurer	Platform	Platform
Examples	Google, Yahoo, Bing, AltaVista, Siri (Apple), Alexa (Ama-zon), Cortana (Microsoft)	Check24, Verifox (Germany) Compare, Thezebra, insurify (U.S.) Confused, GoCompare (U.K.), Comparis, Moneyland (Switzerland) Hoken Ichiba, Kakaku.com (Japan)	Amazon, Uber, Airbnb, Etsy, Shopify, Lyft, Taskrabbit, Upwork, BlaBlaCar, Getaround, Liquid, Zaarly	Facebook, Instagram, Twitter, LinkedIn, Google+, YouTube, Snapchat	PingAn, Zhong An, connected car ecosystems (e.g. Tesla), connected home ecosystems (e.g. Nest), healthcare services ecosystems (e.g. health management portal, hospital, doctors, insurance), financial services ecosystems (e.g. wealth management, asset management, banking, insurance), real estate finance (e.g. developer, agency, broker)	Friendsurance, (Germany), Guevara (U.K.), Brolly (U.K.), PeerCover (New Zealand), InsPeer (France), CommonEasy (Netherlands)

Through the use of big data analytics, data collected by platforms may pave the way for important economic and societal benefits. For example, big data analytics may help to better understand and mitigate risks and to reduce informational asymmetries between insurers and consumers. Furthermore, big data analytics facilitates the development of new and innovative insurance products, enables insurers to expand coverage through better understanding of risk, and allows insurers to expand their role towards predicting and preventing risks.[19]

For insurers, online platforms can provide an opportunity to differentiate themselves in the market, for example by providing new types of value-added services alongside insurance cover. At the same time, insurers face hard choices with respect to their platform strategy. Some insurers are establishing their own platforms. Ping An, for example, is building several ecosystems, including a financial services ecosystem, healthcare services ecosystem, auto services ecosystem, and a real estate finance ecosystem. Such a strategy is likely to be feasible only for large and multinational insurers.

Other insurers have chosen to participate in existing platforms or to enter into supplier agreements.[20] Such a strategy requires insurers to integrate with platforms and create interfaces at different stages of the insurance value chain. This report focuses on customer-facing platforms that play a role in advertising, quoting or in the purchase of insurance (see Figure 2).

Figure 2: Digital intersections in the insurance value chain

Online options offered by many insurers

Claim servicing & indemnification

Product development

Reserving

Pricing & segmentation

Policy purchase

Marketing & advertising

Quote & compare

Many non-insurance platforms offer the option "click here" to insurance as an add-on to other online purchases

Customer entry point
Search engines, virtual assistants, digital comparison tools, social media platforms

The depth of the value-chain integration varies between different types of platforms. The integration in a platform may require a significant investment by an insurer, and this in turn creates a lock-in effect, making it difficult for the insurer to switch to other platforms. There is therefore a risk that insurers could become increasingly dependent on a relatively small number of dominant platforms and digital ecosystems that may try exploit their informational advantage.

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19   The Geneva Association (2018) *'Big Data and Insurance: Implications for Innovation, Competition and Privacy'*, March 2018. See also The Geneva Association (2018) *'Insurance in the digital age: A view on key implications for the economy and society'*, September 2018.

20   Examples include Zhong An's partnership with Alibaba and Mapfre's cooperation with Amazon in Spain.

4. Online platforms and consumer outcomes

This section focuses on the possible implications of the rise of online platforms for consumers of insurance products.

Direct and indirect consumer benefits

Platforms can offer great convenience to consumers. For instance, through the use of big data analytics and artificial intelligence, platforms can make information easily accessible and tailor it to presumed customer needs; they can facilitate the comparison of offers and allow consumers to complete transactions online. As a result, platforms can make it easier for consumers to find and purchase products that match their needs. Direct consumer benefits can also arise from the ability of platforms to combine distinct data sets to develop new business models with new types of transactions, often across traditional product or industry boundaries.

The benefits of customer convenience and innovation extend beyond the individual consumer. An increase in market transparency and a reduction of transaction cost are typically associated with increased competition and societal welfare.[21]

While these direct and indirect consumer benefits may apply to online platforms in general, some benefits may have a particular bearing on insurance due to specific features of the insurance sector. For example, due to the complexity of many insurance products, consumers generally need a considerable amount of time to compare insurance contracts and fully comprehend the cover in all circumstances and eventualities. Ongoing research (unpublished) by The Geneva Association and Edelman Intelligence suggests that a considerable portion of consumers feel that the information available is "confusing and hard to understand". Many individuals therefore put insurance on the back burner; insurance is often not a priority for them. Furthermore, consumers' insurance purchasing decisions are often affected by biases, as empirical evidence suggests.[22] By making information more easily accessible and digestible, platforms may help to overcome such biases and contribute to narrowing the protection gap. Better information may also help to reduce informational asymmetries, a key source of inefficiency in insurance markets. Finally, the ability of platforms to use a broad range of data may also facilitate loss prevention and mitigation. These considerations suggest that potential direct and indirect consumer benefits could be meaningful in insurance.

While platforms offer great potential benefits for consumers, they do at the same time introduce certain risks. These risks are not necessarily new, but they may become more prominent with the rise of the platform economy. They may make it necessary to consider trade-offs between potential benefits and dangers to consumers.

Convenience and accuracy of information

In the context of insurance, two types of trade-offs appear to be of particular importance. First, there is a fundamental trade-off between convenience and accuracy of information provided on platforms. Insurance products are inherently complex, and there is a risk that the accuracy of information provided to consumers may be sacrificed for the sake of convenience. For instance, information may be over-simplified, focusing on a few product characteristics (e.g. price) at the expense of others in order to boost sales. Information may not be sufficiently personalised and may cater only to the average consumer;[23] for example, search results and rankings may not reflect individual user preferences.[24] Consumers may also be exposed to biased information.

In the same way that better information has benefits extending beyond individual consumers, inaccurate and over-simplified information results in economic costs that

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21   In economic terms, platforms can reduce search costs for consumers. A reduction of search costs enhances overall economic welfare, since search costs are deadweight losses for society, see Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological studies Digital Economy Working Paper 2016/05, JRC101501.

22   For example, empirical studies have shown that people tend to underestimate the consequences of low-probability high-impact events, leading to underinsurance against these risks. This is because humans tend to estimate the likelihood and consequences of future disasters based on recent past experience where no incident may have occurred. See e.g. Kunreuther, H.C., Pauly, M.V., and McMorrow, S. (2013) *'Insurance and Behavioral Economics'*, Cambridge University Press.

23   Whether such a thing as "search neutrality" exists is questionable. See Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological Studies Digital Economy Working Paper 2016/05, JRC101501.

24   Martens, B. (2016) 'An Economic Policy Perspective on Online Platforms', Institute for Prospective Technological studies Digital Economy Working Paper 2016/05, JRC101501.

reach beyond the affected individual. For example, over-simplification may promote an over-reliance on price and an under-appreciation of other product characteristics, which may ultimately result in a reduction in the quality of the products. Incentives for quality may also be affected by 'white labelling' when insurance is only a small piece of the overall service package and the insurance provider is not known to the end customer. Such white labelling reduces the importance of brand vis-à-vis the end customer, and hence the importance of reputation for service quality and financial solvency.

The trade-off between convenience and accuracy of information is not new in insurance, and regulation of insurers and insurance intermediaries has been designed to ensure the fair treatment of policyholders. However, the rise of online platforms is likely to affect the balance of this trade-off.

Platforms may be subject to conflicts of interest, and may bias search results and rankings to their advantage, for example if the platform operator is itself active as a seller on the platform. Conflicts of interest may also arise from the platform's fee structure (e.g. sponsored search results or rankings). Furthermore, once a platform has gained a large market share, it may be a rational strategy for the platform to reduce transparency and make it difficult for its users to compare products with those provided on other platforms.

Big data analytics and privacy

The use of large amounts of personal data gives rise to a second type of trade-off—between the benefits of big data analytics and individuals' privacy. Again, this trade-off is not unique to insurance. However, the relevant benefits and risks need to be interpreted in the context of the specific features of the insurance business model.

In many instances, better data makes it possible to better align premiums and risks and to reduce the overall cost of insurance. This has great economic and societal benefits in that it allows premiums to signal risks, reduces the cost of informational asymmetries in insurance markets, and enhances efficiency, thereby boosting insurance protection. Large potential benefits may also arise from

the potential to reduce risks through better data and new digital technologies. On the flip side, the use of large amounts of personal data raises concerns about fairness and discrimination, intrusiveness and the contextual integrity of personal data.[25]

To reap benefits from economies of scope in data collection and analysis, platforms may be tempted to lower privacy standards. They may also monetise personal data by selling it to third parties that use the data in ways not anticipated by consumers. Finally, consumers may be negatively affected by data breaches and other cyber-related threats. These risks seem particularly relevant for e-commerce and social media platforms, as well as digital ecosystems (see Appendix 1 for types of data collected by different platforms).

Policy considerations

The need to reassess trade-offs between convenience and accuracy of information on the one hand, and between the benefits of big data analytics and privacy on the other, raises important policy questions. What is the responsibility of consumers in the purchase of insurance, and what rights should they have? Should they be able to 'blindly' trust information provided by online platforms, or should they be expected to consider whether the product in question is right for them? Should online platforms be subject to regulatory transparency and fairness requirements, similar to those advanced in the European Union or already adopted in some European countries (e.g. in France; see Appendix 3)? Furthermore, in many jurisdictions it may be difficult for consumers to defend themselves against biased search results, rankings or distorted information (if they are even aware of them), because they would have to resort to cumbersome civil law procedures.

Another question is how to ensure insurance-specific market conduct requirements when insurance is provided within complex ecosystems where different players perform different roles in the value chain. Also, under what conditions should online platforms be subject to requirements enforced on traditional insurance intermediaries? One approach would be to distinguish between passive platforms which merely

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25   The Geneva Association (2018) *'Big Data and Insurance: Implications for Innovation, Competition and Privacy'*, March 2018.

provide information, and active platforms which provide recommendations. In practice, however, it will be difficult to draw a dividing line between active and passive platforms, because search and ranking algorithms are not necessarily objective or neutral.[26]

Finally, a separation of risk assessment and risk carrying—e.g. if a large platform sells pre-packaged and pre-classified bundles of risk to non-regulated entities—raises the question of how to assess the riskiness of the risk bundles for solvency purposes.

Potential benefits and risks to consumers—and, hence, the trade-offs discussed above—will depend on the impact of the emerging platform economy on the future competitive landscape.

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26   Martens, B. (2016) *'An Economic Policy Perspective on Online Platforms'*, Institute for Prospective Technological Studies Digital Economy Working Paper 2016/05, JRC101501.

5. Virtual competition: competition in the digital era

The emergence of platforms has undoubtedly intensified competition by reducing search, switching and transaction costs and making it easier for consumers to shop for the product that best matches their needs. At the same time, however, network effects and data-driven economies of scope favour the emergence of large platforms that are able to gain large market shares. The emergence of online platforms thus gives rise to a trade-off between efficiency arising from network effects and (data-driven) economies of scope on the one hand, and the potential emergence of dominant platforms that act as gatekeepers for consumers on the other.

Views on this trade-off differ. On one side of the spectrum, proponents of a lenient antitrust approach towards platforms argue that platforms are unlikely to have market power, even as they gain large market shares. According to this view, network effects and economies of scope increase competition to win the market and do not per se constitute barriers to entry. Unlike traditional brick-and-mortar industries, the platform economy relies on bits and bytes and does not require large (and sunk) physical investments by market entrants. Furthermore, the practice of users to participate in several platforms simultaneously ('multihoming') limits the market power of a platform. Digital markets are therefore inherently dynamic, and platforms are constantly threatened by disruptive innovation and competition from other platforms.[27] This view implies a comparatively lenient antitrust treatment of platform markets, and this is at the origin of a relatively light-touch antitrust approach to online platforms.

The view that the platforms are unlikely to have market power is increasingly being challenged. For example, the role of data as a market entry barrier has been emphasised.[28] Large volumes and a large variety of data collected by platforms may be a source of competitive advantage over traditional firms. They may result in a market entry barrier if new entrants are unable to collect or buy access to the same kind of data in terms of volume and/or variety.[29]

Furthermore, platforms are able to collect data that allows for learning across the entire ecosystem. As a result, innovation may be increasingly data-driven in the platform economy. Market entry barriers may be reinforced by lock-in effects: consumers often prefer high-ranked products, and algorithms that rank products by their popularity create a feedback loop in which popular products remain popular.

As platforms expand their range of activities, they may develop into comprehensive ecosystems that make it difficult for rivals to compete.[30] Such comprehensive ecosystems may also make multihoming by users costly. While users may easily use several search engines, DCTs or social media platforms, it is unlikely that a consumer will subscribe to several connected car, connected home or digital health ecosystems.

A platform that has reached critical mass may design its platform governance in a way to increase market entry barriers. 'Most Favoured Nation' (MFN) clauses applied by some large platforms have received increasing scrutiny by regulators in this respect.[31] A narrow MFN clause determines that the prices charged by the supplier on the platform may not be higher than the prices charged on the suppliers' own website. A wide MFN clause prevents the supplier from charging a higher price on one platform than on any other platform. Wide MFN clauses have been banned by competition authorities in some jurisdictions on the grounds that they can result in high barriers to market entry, because potential market entrants will not be able to offer lower prices than the existing retailers with MFN clauses (see Appendix 3). Narrow MFN clauses may make it difficult for insurers to establish their own platforms because they prevent insurers from attracting users to their platform through favourable prices—a typical pricing strategy in platform markets.

In the presence of market entry barriers, large platforms may act as gatekeepers for their users, and they may assume a position of a demand-side monopoly or oligopoly. Their position may enable them to capture a disproportionate

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27   See e.g. Evans, D.S. (2017) 'Why the dynamics of competition for online platforms leads to sleepless nights but not sleepy monopolies', SSRN Electronic Journal.

28   See e.g. Ezrachi, A. and Stucke, M.E. (2016) *'Virtual Competition: The promise and perils of the algorithm-driven economy'*, Harvard University Press; Stucke, M.E., and Grunes, A.P. (2017) *'Big Data and Competition Policy'*, Oxford University Press; or Autorité de la Concurrance and Bundeskartellamt (2016) *'Competition Law and Data'*, 10 May 2016.

29   Autorité de la Concurrance and Bundeskartellamt (2016) 'Competition Law and Data', 10 May 2016.

30   See e.g. Ezrachi, A. and Stucke, M.E. (2016) 'Virtual Competition', Harvard University Press.

31   See Appendix 3.

share of the value provided by insurance, e.g. by charging high commissions.

There is a growing number of antitrust cases focusing on practices to extend market power to adjacent markets.[32] For example, a platform may skew its algorithms to favour its own offerings, engage in predatory pricing or deny competitors access to the platform. Such practices may ultimately reduce competition and innovation, increase prices and degrade the quality of services.

Platforms do not necessarily need to enter the insurance market as risk carriers. They may adopt specific activities along the insurance value chain. For example, a platform may use its data to perform risk selection and classification, offering suppliers pre-packaged bundles of risk. As platforms become 'co-manufacturers' of insurance products, it may become difficult for insurance regulators to enforce market conduct requirements designed to ensure fair treatment of policyholders. Furthermore, a separation of risk assessment and risk carrying—e.g. if a large platform sells pre-packaged and pre-classified bundles of risk to insurers—may make it difficult for insurers and insurance regulators alike to assess the riskiness of the risk bundles for solvency purposes.

So far, competition policy has adopted a relatively 'light touch' approach to online platforms in most jurisdictions. One reason for this is that traditional instruments of competition policy seem ill-suited to deal with the specific features of the platform economy. For example, the focus on risks for consumers implies that it is difficult to establish anti-competitive conduct for platforms that offer their services to consumers free of charge, such as search engines, virtual assistants or digital comparison tools. In the past few years, the debate on how to adapt competition policy to the digital age has intensified. In particular, when competition authorities assess market power and potential anticompetitive conduct, they should consider the role of data as a production factor and data itself as a potential market entry barrier. They should also consider the impact their decisions have on privacy.

Box 3: Virtual assistants

Advances in machine learning and natural language processing have enabled a rapid enhancement of the capabilities and usage of virtual assistants that offer personalised information based on a voice user interface. Major technology companies are making significant investments in this enhancement, including Apple (Siri), Amazon (Alexa), Facebook (M), Google (Assistant), Microsoft (Cortana) and Samsung (Viv).

The capabilities of virtual assistants are expected to increase substantially in the near future. While today they mainly provide passive searches based on voice requests, in the future they may provide active and personalised recommendations based on a wide range of personal data. Such systems may play an increasingly relevant role in the future, especially with 'digital savvy' generations.

Implications for consumers

Virtual assistants have a number of potential benefits. They enhance customer experience and make it easier for consumers to find services that match their needs. With respect to insurance, they may help customers to find optimal insurance coverage tailored to their current life situation. By raising awareness and improving access to information, they may help to overcome the behavioural biases of insurance buyers.

However, at the same time, virtual assistants raise several risks. Issues that seem particularly relevant are related to accuracy of the information provided, biased search results or recommendations and potential conflicts.

Implications for competition

Insurance product distribution may become increasingly reliant on a small number of virtual assistants if such systems become popular. Virtual assistants could become a unique gateway to access specific customer segments, particularly as the cost of multihoming for consumers is high. (Since virtual assistants are usually tied to a smartphone or other device, consumers would have to change their smartphone/device provider in order to switch between platforms).

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32   For example, the European Commission fined Google in 2017 and 2018 for favouring its own shopping services over those of its competitors, and for blocking rivals from using its popular Android mobile operating system.

6. Conclusions

The emerging platform economy promises large economic and societal benefits. At the same time, however, the increasing importance of online platforms creates new market realities for consumers. In Europe, for example, concerns over potential risks to consumers have led to new initiatives to regulate online platforms (see Appendix 3). In this report, we have identified the key trade-offs involved with the increasing importance of online platforms in the insurance sector.

Implications for consumers

Platforms can offer great convenience to users by making information easily accessible, by facilitating the comparison of various offers, by providing information which is targeted to presumed customer needs, and by facilitating new business models and innovative products.

These benefits extend beyond the individual consumer, as increased market transparency and reduced transaction costs are typically associated with increased competition and societal welfare. Given the complexity of many insurance products, increased transparency may have large potential benefits in insurance, and it may also help to overcome biases against the purchase of insurance, thereby contributing to the expansion of insurance markets and to narrowing protection gaps.

At the same time, however, online platforms pose certain risks for consumers. As a result, trade-offs between potential benefits and dangers may need to be reconsidered. Two types of trade-off seem to bear particular relevance to insurance.

First, there is a trade-off between convenience provided to consumers and the accuracy of information provided. Over-simplification and biased information (e.g. resulting from conflicts of interest) imply that search results, rankings or other information may not necessarily reflect individual user preferences.

Second, the use of large amounts of personal data gives rise to a trade-off between the benefits of big data analytics and individuals' privacy. Big data analytics may provide large benefits by better aligning premiums and risks, by reducing informational asymmetries in insurance markets, and by boosting protection and reducing risks through a better understanding of the risks themselves. On the flip side, however, the use of large amounts of personal data raises concerns about fairness and discrimination, intrusiveness and the contextual integrity of personal data.

The need to balance these trade-offs raises important policy questions. What are the responsibilities and rights of consumers regarding the purchase of insurance? Should online platforms be subject to regulatory transparency and fairness requirements, similar to those advanced by the European Union? How can insurance-specific market conduct requirements be ensured when insurance is provided within complex ecosystems where different players perform different roles in the value chain? Under what conditions should online platforms be subject to requirements enforced on traditional insurance intermediaries?

Strategic implications for insurers

Online platforms provide interesting opportunities for insurers. They provide a way for insurers to differentiate themselves, for example through value-added services. Furthermore, online platforms have the potential to help overcome behavioural biases by increasing market transparency and improving customer information, thereby contributing to the expansion of insurance markets.

On the other hand, however, the ability of online platforms to observe all transactions effectuated on the platform may create an information advantage of platforms over firms. As a consequence, insurers may become dependent on large platforms that are able to extract an increasing share of the added value. Furthermore, online platforms may promote an over-emphasised focus on price competition, making it difficult for insurers to promote features that could add value to individuals and society, such as loss prevention services.

Insurers therefore face hard choices with respect to their platform strategy. Only large multinational players are likely to be able to create their own platforms that act as customer gateways.

Implications for competition

Online platforms have the potential to enhance efficiency by making it easier for consumers to shop for the product that best matches their needs and by facilitating new products and new forms of transactions. At the same time, however, network effects and data-driven economies of scope favour the emergence of large platforms that are able to gain large market shares. Policymakers therefore need to balance a difficult trade-off between efficiency arising from network effects and (data-driven) economies of scope on the one hand, and the potential emergence of dominant platforms that act as gatekeepers for consumers on the other.

In doing so, competition authorities should consider the role of data as a production factor and a potential market entry barrier when assessing market power and potential anti-competitive conduct. The role of data may be particularly relevant as a production factor and as a source of competitive advantage in a data-driven industry like insurance.

Furthermore, when assessing abuse of dominance and mergers in platform markets, competition authorities should not rely exclusively on the impact of consumer prices but should also consider the consequences for privacy. Competition authorities should pay particular attention to practices that have the potential to create market entry barriers, such as MFN clauses, for example. Even so, transparency and non-discrimination requirements for online platforms—such as the ones imposed on Google by the EU Commission in its antitrust litigation—may play an important role in ensuring a competitive insurance market place in the long term.

Appendix

Appendix 1: Data usage of different platforms

Platform	What personal data is used?	How is the data potentially used?
Search engines / virtual assistants	• Search requests by consumers, combined with other available personal data (e.g. geolocation) • Clicks on advertisements	• Improvement of search results • Targeted advertising
Digital comparison tools	• Personal data necessary for the insurer to provide a quote (e.g. name, address, age, etc.). Data varies by line of business • Transactions completed over the platform	• Risk selection and pricing of policies • Targeted advertising (requoting)
E-commerce platforms	• Shopping and buying behaviour, potentially combined with other personal data	• Identification of customer needs and targeted advertising • Risk selection and pricing • Price optimisation
Social media platforms	• All types of usage behaviour such as posts, likes, connections etc.	• Identification of customer needs and targeted advertising • Risk selection and pricing • Price optimisation (personal pricing)
Digital ecosystems	• Usage behaviour such as driving behaviour (telematics), health data (wearables), smart home sensor data, etc., depending on the ecosystem	• Identification of customer needs and targeted advertising • Development of new propositions (e.g. on-demand and pay-per-use) • Risk selection and pricing • Dynamic pricing based on digital monitoring (e.g. telematics) and price optimisation
Peer-to-peer insurance	• Data necessary to provide a quote	• Risk selection and pricing

Appendix 2: Overview of online platforms with relevance for the insurance industry

Description	Customer side	Provider side	Direct network effects	Indirect network effects
Search engines	Users	Providers	Weak (the more users enter search terms, the better the search algorithm)	• More users attract more advertisers • More advertisers provide more search results for users
Virtual assistants	Users	Providers	Weak (the more users enter search terms, the better the search algorithm)	• More users attract more advertisers • More advertisers provide more search results for users
Digital comparison tools (DCTs)	Prospective policyholders	Insurers	No	• The value for customers increases with the number of insurers (choice, breadth of offer, etc.), at least up to a certain point • The value for insurers increases with the number of customers (customer base)
E-commerce and sharing economy platforms	Buyers	Sellers	No	• The value for buyers increases with the number of sellers • The value for sellers increases with the number of buyers
Social media platforms	Users	Advertisers, content providers	The value for users increases with the number of other users	• Only from users to consumers, as the value for advertisers increases with the number of users
Peer-to-peer insurance	Consumers	(Re)insurers	The value for policyholders increases with the number of policyholders up to a certain point (risk pooling)	• Only from consumers to (re)insurers, as the number of consumers increases the value for (re)insurers
Digital ecosystems	Buyers	Providers	No	• Ecosystems benefit from a high number of users by enhanced customer insights (learning)

Data-driven economies of scope	Cost of multihoming	Consumer benefits	Risks to consumers	Examples
Search behaviour of users allows creation of user profiles	Low (the use of a search engine is typically free)	• Reduced search costs	• Conflicts of interest • Biased search results • Over-reliance on price competition to the detriment of quality and choice	Google, Yahoo, Bing, AltaVista, Siri (Apple), Alexa (Amazon), Cortana (Microsoft)
Search behaviour of users allows creation of user profiles	Low (the use of a search engine is typically free)	• Reduced search costs	• Conflicts of interest • Biased search results • Over-reliance on price competition to the detriment of quality and choice	Apple (Siri), Amazon (Alexa), Facebook (M), Google (Assistant), Microsoft (Cortana), and Samsung (Viv)

Weak	Low (DCTs are typically remunerated by insurers)	• Greater transparency for customers (reduction of search costs)
		• Enhanced price competition
			• Insurers may become dependent on large platforms for selling insurance
			• Platforms may abuse a dominant position through
			  - Abusive prices
			  - MFN clauses
			  - Distorting competition or preferring own offerings (in case of vertical integration)
			• Data collected by platforms may act as entry barrier
			• Oversimplification may result in insufficient customer information
			• Over-reliance on price competition to the detriment of quality and choice
				Check24, Verifox (Germany) Compare, Thezebra, Insurify (U.S.) Confused, GoCompare (U.K.), Comparis, Moneyland (Switzerland), Hoken Ichiba, Kakaku (Japan)

Shopping behaviour of users allows creation of user profiles	Low	• Customer experience (one-stop shop)	• Dominant position of platform may be extended to insurance • Data collected by platforms may act as entry barrier	Amazon, Etsy, Shopify, Airbnb, Uber, Lyft, Taskrabbit, Upwork, BlaBlaCar, Getaround, Liquid, Zaarly
Enhanced customer insights	Low	• Tailored product offerings	• Dominant platform may distort competition on the advertising side to promote own products	Facebook, Instagram, Twitter, LinkedIn, Google+, YouTube, Snapchat
No	High	• Reduced prices		Friendsurance (Germany), Guevara (U.K.), Brolly (U.K.), PeerCover (New Zealand), InsPeer (France), CommonEasy (Netherlands)
Strong due to broad range of cross-industry services	High	• Customer experience (one-stop shop) Innovation	• Dominant position of platform may be extended to insurance • Data collected by platforms may act as entry barrier	• PingAn, Zhong An, • Connected car ecosystems (e.g. Tesla), • Connected home ecosystems (e.g. Nest), • Health Care services ecosystem (e.g. health management portal, hospital, doctors, insurance), Financial services ecosystem (e.g. wealth management, asset management, banking, insurance), real estate finance (e.g. developer, agency, broker)

Appendix 3: Regulation of online platforms and competition policy in the EU

	Europe
Regulation of online platforms	In April 2018, the European Commission proposed new rules on transparency and fairness that specifically apply to online platforms. Online platforms must adhere to increased transparency standards and provide effective dispute resolution procedures.
	France adopted a law on platform fairness in 2016 which imposes transparency on online platforms regarding general terms and conditions, methods of listing, ranking and delisting, and the existence of a contractual relationship (e.g. remuneration) that influences the listing or ranking.
Competition policy	In 2017 in the Google Search antitrust case, the European Commission ordered Google to provide equal treatment to rival comparison shopping services as to its own service.
	Several competition authorities have prohibited the use of wide MFN clauses in recent antitrust cases.
	In May 2017, the European Commission prohibited Amazon from applying MFN clauses in its contracts with e-book suppliers.
	Several national competition authorities have banned the use of wide MFN clauses by hotel booking platforms, including Germany, France, Italy and Sweden.
	In 2015, the U.K. Competition and Market Authority prohibited the use of wide MFN clauses by price comparison websites for car insurance.

Glossary

Artificial intelligence: Is a branch of computer science dealing with the simulation of intelligent behaviour in computers. More commonly, the term is used to refer to the capability of a machine to imitate intelligent (human) behaviour.[33]

Big data: Is a high-volume, high-velocity and high-variety information asset that demands cost-effective, innovative forms of information processing for enhanced insight and decision-making. Big data may be assessed through 5 'V' parameters: volume, velocity, variety, veracity, and variability.[34] Some commentators have added visualisation and value to those parameters.[35] Other definitions emphasise the complexity of big data. The National Institute of Standards and Things (NIST) defines big data as data that exceed the capacity and capability of current methods and systems.

Economies of scope: Economies of scope are cost advantages that result when firms provide a variety of products rather than specialising in the production or delivery of a single product or service.

Digital ecosystem: By drawing an analogy to natural ecosystems, the term 'digital ecosystem' focuses on the complex interactions among different actors that combine competitive and collaborative elements. Gartner defines a digital ecosystem as an interdependent group of actors (enterprises, people, things) sharing standardised digital platforms to achieve a mutually beneficial purpose.[36]

Machine learning: Is an application of artificial intelligence that provides systems with the ability to automatically learn and, from experience, to improve without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.[37] A distinction is made between supervised and unsupervised machine learning.

Most Favoured Nations clause: A narrow MFN clause is an arrangement between an online platform and a supplier whereby the supplier grants the platform a price that will not be less favourable than the price charged on the supplier's own website. A wide MFN clause requires granting the platform a price which is not less favourable than the price charged on any other platform or distribution channel.

Multihoming: Refers to the affiliation of users with several competing platforms.

Network effects: (Positive) network effects arise when the value a user derives from a product or service increases with the number of other users. Direct network effects imply that the value of the service or product directly increases with other users from the same group, as in the traditional telephone network, for example. Indirect network effects refer to situations where the value to one group of users (e.g. advertisers) increases with the size of another group of users (e.g. customers).

Online platform: Common definitions emphasise the fact that platforms allow for interactions between different types of user groups (e.g. buyers and sellers, users and advertisers, etc.) and stress the role of network effects between these groups.[38] More recently, the ability of platform operators to observe all interactions between user groups over the platform has been highlighted as a key distinguishing feature of online platforms.[39]

Paid search: Refers to any search process where results are dictated by payment from advertisers. The term is often associated with pay-per-click (PPC) advertising, a specific kind of advertising, where advertisers pay search engines, e.g. Google AdWords or other web hosts when advertisements are clicked, which gives the host entity incentive to display the advertisements as search results. The less common pay-per-impression (PPI) means that advertisers pay when the advertisement is displayed.

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33   https://www.merriam-webster.com/dictionary/artificial%20intelligence
34   Swan, M. (2015) 'Philosophy of Big Data: Expanding the Human-Data Relation with Big Data Science Services' in 2015 *IEEE First International Conference on Big Data Computing Service and Applications* (Big Data Service).
35   See e.g. Devan, A. (2016) *'The 7 V's of Big Data'*, available at https://www.linkedin.com/pulse/7-vs-big-data-ashley-devan/
36   Gartner, '*Seize the Digital Ecosystem Opportunity: Insights From the 2017 CIO Agenda Report'*
37   http://www.expertsystem.com/machine-learning-definition/
38   See e.g. Rochet, J.-C. and Tirole, J. (2003) *'Platform Competition in Two-sided Markets, Journal of the European Economic Association* 1(4): 990-1029.
39   Martens, B. (2016), *'An Economic Policy Perspective on Online Platforms',* Institute for Prospective Technological studies Digital Economy Working Paper 2016/05, JRC101501.

Peer-to-peer (P2P): A form of insurance that allows insureds to pool their capital, self-organise and self-administer their own insurance. The core idea of P2P is that a set of like-minded people with mutual interests group their insurance policies together, thereby introducing a sense of control, trust, and transparency while at the same time reducing costs.

Sharing economy: A term used to describe a multitude of different companies that offer a variety of services. The basic concept is that anyone can make money from their own goods and services. Companies at the forefront of the sharing economy follow the same basic model: strangers share goods or services, connecting through a website or an online application that is facilitated by a third-party business. Smartphone apps allow people to conduct transactions anywhere with the convenience of their mobile phone, and online payment services offer quick compensation. The sharing concept has always existed, but what distinguishes the modern sharing economy are online platforms that easily match demand and supply. This ease and flexibility to conduct a trade anytime and anywhere from a smartphone has propelled the growth of the sharing economy.[40]

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40   NAIC (2018) Sharing economy, https://www.naic.org/cipr_topics/topic_sharing_economy.htm.

The platform economy has the potential to deliver substantial economic and societal benefits. At the same time, the rise of online platforms creates new challenges for consumer protection and competition policy. In order to ensure a thriving and competitive marketplace, policymakers should consider the role of data as a production factor and data itself as a potential barrier to market entry when assessing market power and potential anti-competitive conduct.