THE EVOLUTION OF ANTITRUST IN THE DIGITAL ERA: Essays on Competition Policy

Volume One

Editors David S. Evans Allan Fels AO Catherine Tucker





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Competition Policy International, 2020

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Printed in the United States of America

First Printing, 2020

ISBN 978-1-950769-60-5 (Paperback) ISBN 978-1-950769-61-2 (Hardcover) ISBN 978-1-950769-62-9 (Ebook)

Publisher's Cataloging-in-Publication Data provided by Five Rainbows Cataloging Services

Names: Evans, David S. (David Sparks), 1954- author. | Tucker, Catherine, editor. | Fels, Allan, editor.

Title: The evolution of antitrust in the digital era : essays on competition policy, volume I / David S. Evans ; Catherine Tucker [and] Allan Fels AO, editors.

Description: 1st edition. | Boston : Competition Policy International, 2020.

Identifiers: LCCN 2020945593 (print) | ISBN 978-1-950769-60-5 (paperback) | ISBN 978-1-950769-61-2 (hardcover) | ISBN 978-1-950769-62-9 (ebook)

Subjects: LCSH: Antitrust law. | Competition, Unfair. | Electronic commerce--Law and legislation. | Big data. | Consolidation and merger of corporations. | Commercial law. | BISAC: LAW / Antitrust. | LAW / Commercial / General. | LAW / Mergers & Acquisitions.

Classification: LCC KF1649 .E93 2020 (print) | LCC KF1649 (ebook) | DDC 343.07/21--dc23.

Cover and book design by Inesfera. www.inesfera.com

Editors' Note

The story of antitrust is the story of technology. The essays in this volume tell the latest chapter in this ongoing saga.

In the late 19th century, the disruptive technology of the day was the railroad. In the expanding U.S., local railroads were bought up and consolidated into broad systems by the "trusts" that gave the Sherman Antitrust Act of 1890, and the resulting worldwide body of law, its name. Moving on from transport, various technologies have formed the locus of economic growth, and therefore of antitrust scrutiny, throughout the past hundred years or so.

After the railroads came Standard Oil, and its control over the key input for 20th century economic growth. Again, this was a reflection of technology, both in other industries' need for vast sources of energy, and the improved refining technology that led to scale in the oil industry itself. Antitrust enforcement, famously, split the company up. Then, mid-century, came the telecommunications revolution. In the U.S., concerns crystallized around the role of the Bell System as an incumbent technology provider. Once more, antitrust enforcement split it up. In the 1970s and 80s, IBM's mainframe computing business became the target of enforcement. Following on from that, the banner cases of the 1990s in both the U.S. and Europe were against Microsoft's practices in the desktop computing space. In the latter two instances, however, the consequences were less radical, due, perhaps, to the intervening Chicago School critique of earlier antitrust remedies.

Despite these different outcomes, at each step along the way, antitrust thinking has been defined by the technologies that gave rise to its greatest enforcement challenges. Since the dawn of this century, attention has turned to the current generation of innovators, in what today is termed the "digital economy." The quandaries facing today's legislators, enforcers, and public, are novel and multifaceted. Nonetheless, they bear comparison with the formative struggles that policymakers grappled with throughout the first century of antitrust.

The pieces in this volume draw on the lessons of the past to set out how competition rules might deal with this new set of concerns, in various jurisdictions around the world. Each one draws on general themes, yet nevertheless addresses specific aspects of the contemporary debate.

Much of today's antitrust discussion concerns the businesses run by large companies such as Amazon, Apple, Facebook, Google, and Microsoft. Each has significant share in a given industry, and derives its revenues from what are described as "platforms." But how are such platforms different from the incumbent businesses of the past? The answer to this is not clear. Yet queries surrounding the platforms' alleged dominance, and whether their conduct amounts to an infringement of competition rules, have been a source of controversy for over a decade. The pieces in this volume address this dilemma head-on.

At a fundamental level, there is the definitional threshold of what a "platform" even is, and what rules should apply to such a business. Then there is the question of whether "platforms" have a "special responsibility" towards downstream operators that rely on them to reach customers. In other words, can platform operators favor their own businesses in those related markets? Or do competition laws require them to treat all firms in the same way? What are the risks to competition if platforms are given free rein? In antitrust parlance, these questions are assessed under the rubric of "self-preferencing," which has dominated recent headlines.

Pieces by **Thomas Kramler** and **Robert D. Atkinson** & **Joe Kennedy** report on this controversy from the trenches. The authors draw on their considerable experience in dealing with these issues to ask whether antitrust concerns in the digital economy can effectively be addressed within the confines of existing antitrust law and jurisprudence, or whether new rules are needed.

At the time of publication, this "platform regulation" debate is reaching its crescendo. In 2019, various jurisdictions, including the EU, Germany, Australia, and the Brexiting UK, commissioned detailed reports on whether competition rules need to be updated to deal with "platforms," and "self-preferencing" specifically. The coming months and years will see legislatures take action on these reports. Much is at stake in how these reports' conclusions are interpreted. The pieces in this volume form a vital part of that discourse.

Aside from these (almost existential) concerns, there is the question of how "platforms" interact with other actors in the economy. While it is productive for there to be broad discourse on the role of competition and digital regulatory policy, it is also vital for those rules to stay in their own lane. Otherwise, reforms grounded in the logic of antitrust could unduly expand its role, and counteract other policies. This debate has reached an advanced stage in Australia, where policy efforts have honed in on the media and news industry. Pieces by **Simon Bishop** & **George Siolis**, and **Andrew Low** & **Luke Woodward**, describe these developments, and discuss the risks of focusing on a narrow set of sector-specific concerns to derive broad antitrust solutions.

Then, there are even more specific concerns. Algorithms, anonymously executed in server farms, dominate modern commerce. Aside from mundane operational decisions, algorithms are increasingly used to set pricing and other commercial strategies. This can be pro-competitive and efficient. But algorithms, like people, can also restrict competition and harm consumers. If firms use algorithms that "autonomously" tacitly collude through deep machine learning, can the firms that run them be held liable? The pieces by **Andreas Mundt** and **Gönenç Gürkaynak**, **Burcu Can** & **Sinem Uğur** underline the need for further research on how such algorithms operate in real-life settings, before creating a new head of liability.

Technology allows consumers to access and interact with offers in the digital world with remarkable ease. But it has also created the potential for new forms of consumer exploitation, and facilitates highly individualised price discrimination. This creates opportunities for business models based on exploiting incumbents' superior bargaining position, particularly in the business-to-business space. Platforms can make "take-it-or-leave-it" offers that allow the platform to enjoy all the surplus of trade. This notion of an "abuse of a superior bargaining position" is foreign to competition rules in certain jurisdictions, but is known in Japanese competition law, as discussed by **Reiko Aoki** & **Tetsuya Kanda**.

Moore's Law famously predicts that the number of transistors on a microchip will double every two years, though their cost will be halved. These remarkable advances, coupled with parallel developments in mass data gathering and storage, allow today's computers to solve tasks of extraordinary complexity, including innovative, reliable, and lucrative predictive analytics. Yet this possibility raises profound privacy concerns, as reflected in laws such as the California Consumer Privacy Act and the EU's General Data Protection Regulation. Such rules, in turn, raise novel competition issues.

This dynamic has profound implications for competition law, and how it interacts with privacy rules. Although competition and privacy law are separate disciplines, they are in tension with each other. As **Maureen K. Ohlhausen** & **Peter Huston** discuss, this problem came to the forefront in recent U.S. litigation between hiQ and LinkedIn. The latter, invoking the privacy rights of its members, employed technical measures to block hiQ's automated bots from accessing data on LinkedIn's servers. HiQ, in turn, alleged that LinkedIn's actions were in reality an attempt to restrict competition.

As the authors discuss, this case represents the archetypal conflict between data privacy and competition, and will be repeated throughout the world in years to come. The policy dilemma between privacy rules and antitrust cannot be overstated. Protecting privacy by restricting data flows can hinder competition by denying new entrants access to the data they need to compete. On the other hand, ensuring that rivals have easy access to data can diminish privacy by distributing data in ways that consumers may not anticipate or want.

The foregoing should make clear that the story of antitrust in the "digital economy" is but one chapter in a saga that is still being written. Like all sagas, it draws from universal themes, and is self-referential within its canon. Yet it is all the more interesting as a result.

The editors would like to thank Elisa Ramundo, Sam Sadden, and Andrew Leyden for commissioning, compiling, and editing this volume.

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The Role of Competition Law and Policy in Supporting ASEAN e-Commerce

By Burton Ong, Celestine Song & Hi-Lin Tan¹

Abstract

E-Commerce plays an increasingly significant role in the way ASEAN consumers purchase goods and services and will continue to be a key front for ASEAN economic integration, especially in the face of the COVID-19 pandemic. Against a backdrop of multiple measures taken by ASEAN leaders to promote intra-ASEAN e-Commerce trade, digital trade in the region might be simultaneously facilitated and impeded by regional market developments that impact the competitive landscape in which online merchants operate. For instance, super apps that make it easier for individuals to transact in a range of different products and services through a common digital platform have brought about tangible benefits to ASEAN consumers, who stand to reap further benefits down the road as cross-border e-Commerce expands across ASEAN. However, the sheer size and scale of some of these super apps invites antitrust scrutiny in relation to the degree of market power they wield and their impact on competition. Antitrust concerns may arise because of the impact of such platforms on the contestability of these markets and interoperability with competitors. E-Commerce platforms that engage in misleading price practices could prevent consumers from making informed purchasing decisions, which might then impede the ability of honest rival businesses to compete with such errant market players on a level playing field and retard the development of e-Commerce markets. Competition authorities can play a role in addressing these concerns. They can deploy competition law and policy as a regulatory tool against conduct that has an adverse effect on market contestability, interoperability, transparency, and the development of a vibrant digital ecosystem. Examples of such measures include the CCCS's enforcement against the Grab/Uber merger in 2018 and investigation into the food delivery sector in 2016 to safeguard market contestability. CCCS also worked with a payment service provider to remove restrictions that prevented

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merchants from accepting other payment cards on common payment terminals and has developed a set of guidelines on price transparency to educate suppliers on when pricing practices may be potentially misleading, so that such practices can be reduced over time, thereby enabling consumers to shop confidently online. ASEAN competition authorities have also cooperated among themselves to achieve effective competition enforcement in their respective jurisdictions. For example, CCCS cooperated with competition authorities in Malaysia, Philippines and Vietnam on the Grab/Uber merger, where agencies shared non-confidential information and worked with other ASEAN competition authorities to develop a competition assessment framework for the e-Commerce sector. As nurturing a regional ecosystem that is conducive to ASEAN e-Commerce growth requires Member States to understand the impact of their respective governmental actions on competition and market access, national competition authorities can also play the advisory role to other government agencies in evaluating the impact of their policies on e-Commerce to avoid any unintended negative consequences on competition. Recognizing how empowering consumers with greater control over their data can support the growth of digital economy and trade, CCCS partnered with Singapore's Personal Data Protection Commission to study how data portability might be facilitated to support the digital economy.

I. e-Commerce IN ASEAN

ASEAN² consumers are increasingly turning to their smart phones and mobile apps to engage in e-Commerce transactions, whether for transport, food delivery, e-payments or shopping. In Southeast Asia, the tremendous growth of cross-border e-Commerce has the potential to facilitate regional economic integration and economic growth within the ASEAN Economic Community ("AEC"). ASEAN has the third largest population in the world with 650 million people, and a Gross Domestic Product that is the fifth largest in the world at US\$3.0 trillion in 2018.³ The region which has a large and growing middle class with over 360 million internet users,⁴ has seen its internet economy grow to US\$100 billion in 2019 and is expected to reach US\$300 billion in 2025.⁵

For all ASEAN economies, the digital economy can unlock the potential of SMEs across the region as it affords an unprecedented opportunity for even the smallest enterprises to access consumers in many markets throughout the AEC, allowing them to expand their reach across national boundaries to offer their goods and services

² The Association of Southeast Asian Nations (ASEAN), which was established in 1967, is comprised of ten Member States, namely Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

³ The ASEAN Secretariat: "ASEAN Key Figures 2019," October 2019.

⁴ Google, Temasek, Bain & Company: "e-Conomy SEA 2019," October 2019.

⁵ Google, Temasek, Bain & Company: "e-Conomy SEA 2019," October 2019.

in neighboring territories. For example, businesses hoping to sell to consumers outside of their home markets to consumers in other parts of ASEAN no longer need to set up physical retail stores in these markets. This enables businesses to expand into foreign markets more quickly to tap on business growth opportunities. The cost savings could then be passed on to ASEAN consumers that could also benefit from having access to a wider range of products and services from vendors in the region with greater convenience. The COVID-19 pandemic has further highlighted the strategic commercial importance of cross-border e-Commerce. As many traditional brick-and-mortar businesses have been greatly affected by the COVID-19 related restrictions on business operations and physical activities, e-Commerce has helped retailers diversify their sales channels and revenue streams. For example, businesses that list their products on multiple e-marketplaces to sell to consumers overseas may be able to make up for the loss of domestic sales. Even when the COVID-19 pandemic abates and restrictions are eased, the role of e-Commerce in strengthening business resilience and supporting economic recovery across ASEAN is likely to stay. Therefore, if ASEAN governments continue to support and harness digital connectivity, and ASEAN businesses continue to move towards greater levels of digitalization in their operations, the pay-offs will be significant.⁶

Recognizing the importance of cross-border e-Commerce, ASEAN has taken various significant steps to realize the potential of ASEAN e-Commerce trade, including the e-ASEAN Framework Agreement7 adopted by the ASEAN leaders in 2000. These efforts have resulted in encouraging signs such as the entry of, and investments by, large and sophisticated foreign e-Commerce players such as Amazon and Alibaba into the region. Successful e-Commerce platforms operating across ASEAN today include Tokopedia⁸ from Indonesia and Lazada⁹ from Singapore. These online marketplaces have provided businesses the means to reach new consumers, both within their home countries and beyond. ASEAN Member States ("AMSs") have continued to step up their efforts quickly to facilitate the creation of a more conducive regulatory environment for the growth of e-Commerce. Singapore, for instance, pushed for the roll-out of an e-Commerce agreement between the AMSs to develop an innovation

- 8 Please refer to www.tokopedia.com.
- 9 Please refer to Lazada.sg.

⁶ Channel NewsAsia (CNA) article dated March 2, 2018: Singapore to push for ASEAN e-Commerce agreement, innovation network.

⁷ The objectives of the e-ASEAN Framework Agreement are to: (a) promote cooperation to develop, strengthen and enhance the competitiveness of the information and communications technology (ICT) sector in ASEAN; (b) promote cooperation to reduce the digital divide within individual ASEAN Member States and among ASEAN Member States; (c) promote cooperation between the public and private sectors in realizing e-ASEAN; and (d) promote the liberalization of trade in ICT products, ICT services and investments to support the e-ASEAN initiative. More information about the agreement can be accessed via https://asean.org/?stat-ic_post=e-asean-framework-agreement.

network to benefit businesses¹⁰ when they expand across Southeast Asia, building on the e-ASEAN Framework Agreement to develop an ASEAN Agreement on e-Commerce¹¹ that had sought to advance e-Commerce trade rules, lower barriers to entry and build greater digital connectivity to facilitate e-Commerce flows in the region.¹² AMSs have also committed to the AEC Blueprint 2025, which has called for strategic measures such as harmonized consumer rights and the establishment of protection laws and a comprehensive framework on personal data protection to be put in place.¹³ One of the objectives of the AEC Blueprint, set out in [27](iv), is for the AMSs to "[e]stablish regional cooperation arrangements on competition policy and law by establishing competition enforcement cooperation agreements to effectively deal with cross-border commercial transactions."

While some progress has been made in developing the ASEAN e-Commerce landscape in recent years, there is still substantial potential for greater e-Commerce adoption in the region. Obstacles to foreign market access,¹⁴ as well as the lack of

¹⁰ The agreement encourages paperless trading between businesses and governments, which can generate more rapid and efficient transactions in ASEAN. In addition, businesses can access and move data across borders more easily, subject to appropriate safeguards. The agreement also helps to bolster the trust and confidence of ASEAN consumers in e-Commerce and drive adoption, which will enable ASEAN businesses to grow domestically, regionally and globally.

¹¹ The ASEAN Agreement on e-Commerce was signed by economic ministers from ASEAN on November 12, 2018. Apart from aiming to facilitate cross-border e-Commerce transactions, the pact will look to foster an environment of trust and confidence in the use of e-Commerce and aims to deepen cooperation among ASEAN Member States so as to spur the use of e-Commerce as a way of driving regional economic growth. More information of the ASEAN Agreement on e-Commerce can be accessed via https://www.channelnewsasia.com/news/business/asean-economic-ministers-ink-first-e-commerce-agreement-10920610.

¹² Description of the ASEAN Agreement on e-Commerce taken from the keynote address by the Minister for Trade and Industry, at the Asia Business First Forum 2018 on March 28, 2018. Keynote address can be accessed via https://www.mti.gov.sg/te-IN/Newsroom/Speeches/2018/03/Speech-by-Minister-Iswaran-at-the-Asia-Business-First-Forum-2018.

¹³ Two of the strategic measures to be included in the ASEAN Agreement on e-Commerce described in the ASEAN Economic Community Blueprint 2025 (refer to page 24, para 53 of the blueprint) is to put in place an "Harmonised consumer rights and protection laws" and "Coherent and comprehensive framework for personal data protection. The Blueprint can be accessed via https://www.asean.org/storage/2016/03/AECBP_2025r_FINAL.pdf.

¹⁴ Lack of foreign market access was cited as a cross border challenge for e-Commerce in ASEAN the EDB report titled "e-Commerce in ASEAN: Seizing opportunities and navigating challenges." Report can be accessed via https://www.edb.gov.sg/en/news-and-events/insights/ innovation/e-commerce-in-asean-seizing-opportunities-and-navigating-challenges.html.

interoperable payment¹⁵ and digital services,¹⁶ can be a challenge for firms looking to capitalize on cross-border e-Commerce opportunities. In addition, the evolution of e-Commerce platforms has led to the emergence of interconnections between previously unrelated markets and industries. For example, the rise of multi-market e-Commerce applications ("super" apps) that make it easier for consumers to transact in different product and service markets through a common digital platform have the potential to simultaneously impede and to facilitate cross-border e-Commerce transactions. The sheer size and scale of some of these super apps invites antitrust scrutiny in relation to the degree of market power they wield over the different participants they interact with in the multi-sided markets they operate. Antitrust concerns might also arise in relation to the impact of such entities on the contestability of these markets to existing or potential competitors.

II. POTENTIAL OPPORTUNITIES AND CHALLENGES FOR ASEAN e-Commerce

Super apps first emerged in China and took the country by storm, with Chinese companies such as Meituan, Alipay and WeChat leveraging on the high recurring usage of their platforms to consolidate many types of services onto a common application platform. Meituan grew from a F&B group buying app to a super app that offers many different services such as catering, on-demand delivery, car-hailing, hotel and travel booking and movie ticketing.¹⁷ Alipay leveraged on its high volume of payment transactions to incentivize the use of other services within the app itself. The most prominent example is perhaps WeChat, which started as a mobile messaging app but has branched out into building infrastructures for other apps to build on top of their app to facilitate e-Commerce transactions. Once in the WeChat eco-system, one can make cashless payments in stores, hail a cab, order food and pay utility bills, among other functions using WeChat's payment service – WeChat Pay.

¹⁵ Keynote by Jacqueline Loh of the Monetary Authority of Singapore at the June 26, 2018 Central Bank Payments Conference mentioned how it is important to aim for interoperability and efficiency beyond domestic systems as "more businesses find ways to deliver goods and services overseas, payments will also need to keep up." It also noted that although cross-border linkages offer huge benefits in important areas such as trade and tourism, implementing them is an up-hill task. This suggests that interoperability of payment services across borders is an existing challenge. Keynote speech can be accessed via https://www.mas.gov.sg/news/speeches/2018/epayments-in-asia.

¹⁶ One of the strategic action plans under the ASEAN Economic Community Blueprint 2025 (refer to page 24, para 53 of the blueprint) is to put in place a "inter-operable, mutually recognised, secure, reliable and user friendly e-identification and authorisation scheme." This suggests that interoperability of digital services is still an existing challenge which ASEAN is trying to resolve. The Blueprint can be accessed via https://www.asean.org/storage/2016/03/AECBP_2025r_FINAL.pdf.

¹⁷ Please refer to https://about.meituan.com/en/about for more information.

We see similar promising developments in Southeast Asia with specific on-demand service providers leveraging on the user data they have accumulated to expand their presence across various verticals. Both Indonesia's GoJek¹⁸ and Singapore-based Grab¹⁹ started as ride-hailing platforms, but swiftly expanded to offer other services including their respective payment services, with the latter recently announcing its collaboration with the SingTel Group (a provider of infocomm technology services) to bid for a digital banking license in Singapore. While GoJek's digital payment service, Go-Pay,²⁰ and Grab's equivalent of that, GrabPay,²¹ do not currently allow crossborder payment transactions, there is potential for these super apps to allow for such developments and facilitate cross-border e-Commerce moving forward. A partnership between Grab and Fave²² allows Fave to use GrabPay credits in Singapore and Ma-

¹⁸ GoJek was founded in 2010 with providing solutions to Jakarta's ever-present traffic problems in mind, GoJek started as a call center with a fleet of only 20 motorcycle-taxi drivers. With the principle of using technology to improve the lives of users, the GoJek app was launched in January 2015 for users in Indonesia to provide motorbike ride-sharing (GoRide), delivery (GoSend), and shopping (GoMart) services. Today, GoJek has transformed into a "super app": a one-stop platform with more than 20 services, connecting users with over 2 million registered driver-partners, 400,000 GoFood merchants, and 60,000 GoLife service providers – with a total of more than 130 million total downloads across the region. More information about GoJek can be accessed via https://www.gojek.com/sg/about/.

¹⁹ Grab began as a taxi-hailing app in 2012 and is now Southeast Asia's leading super app, which provides highly-used daily services such as ride-hailing, food delivery, payments, and more. In Singapore, Grab provides hotel booking, movie tickets booking, trip planning and video streaming services among others. An overview of the services provided by Grab can be accessed via https://engineering.grab.com/grab-everyday-super-app.

²⁰ Go-Pay was officially launched in April 2016 as an e-wallet service in Indonesia. According to an article by Financial Times dated December 2019 titled "Fintech: the rise of the Asian 'super app'," Go-Pay is used in 370 cities across Indonesia. Go-Pay is a mobile wallet to pay for both in-store purchases and services on the GoJek app such as GoJek rides and deliveries. Users can also use Go-Pay for peer-to-peer fund transfers. More information on Go-Pay can be accessed via https://blog.gojekengineering.com/easier-payments-with-gopay-2de099aabeb0 and https://kr-asia.com/features-and-functions-of-go-pay-vs-ovo-side-by-side.

²¹ GrabPay is a mobile wallet to pay both for in-store purchases and services on the Grab app such as Grab rides and GrabFood deliveries. Users can also use Grabpay for instant and free peer-to-peer fund transfers. More information on GrabPay can be accessed via https://www.grab.com/sg/pay/.

²² Fave - formerly Groupon Singapore, is a deals platform which provides discounted offers in Singapore, Malaysia and Indonesia in a single, convenient mobile app. More information about Fave can be accessed via https://www.myfave.com/.

laysia.²³ In 2018, Grab announced plans to offer instant remittance service to allow Grab users to send money instantly and securely to other countries.²⁴ The potential to develop interoperable ASEAN e-wallets could significantly reduce payment friction related to intra-ASEAN tourism and business travel. Currently, GrabPay Wallet users in Singapore are already able to send money from their Singapore GrabPay Wallet to another GrabPay Wallet in the Philippines without incurring transfer fees.²⁵ Such interoperable real-time regional payment systems will expand and enhance cross border e-Commerce opportunities for consumers, especially the large segment of unbanked citizens and small businesses in ASEAN,²⁶ to access products and services across ASEAN. An example of interoperability of payment services is the linkage be-

²³ Under the tie-up which started in October 2018, GrabPay mobile wallet was added to Fave's platform, enabling Fave's customers to spend their GrabPay credits at restaurants and retailers on the Fave network. Users can spend their credits across multiple Fave categories - from food and beverage to beauty, massage, fitness, travel and attractions - and get discounts and cashback. More information on the strategic tie-up between Fave and Grab can be accessed via https://www.straitstimes.com/business/companies-markets/grab-fave-in-strategic-tie-up-to-boost-growth-across-asean.

²⁴ More information on Grab's plans to offer instant remittance services for Grab users can be accessed via https://www.straitstimes.com/business/banking/grabpay-wallets-to-offer-in-stant-remittance-overseas-from-early-2019.

²⁵ More information about the Grab remittance services for Singapore and Philippines users can be accessed via https://www.grab.com/sg/pay/remittance/.

²⁶ According to an article titled "How Grab is transforming finance and payments in Southeast Asia" by TECHINASIA published in August 2019, 73 percent of the ASEAN population remains unbanked. More information on the article can be accessed here https://www.techinasia.com/grab-transforming-finance-payments-southeast-asia.

tween Singapore's PayNow²⁷ and Thailand's PromptPay.²⁸ This linkage allows someone in Singapore to send money to another person in Thailand, and vice versa, using just their contact numbers at any time of the day. Businesses and consumers clearly benefit from the availability of this cross-border cashless payment service.

Interoperable regional payment services for unbanked consumers and businesses benefit both brick-and-mortar retailers and e-Commerce retailers. While consumers are already able to make e-Commerce transactions via credit cards and online payment systems such as PayPal, transactions using these payment methods require e-Commerce retailers to integrate and maintain the necessary electronic payment infrastructure that can support such payment methods in their online business platforms and may incur additional transaction fees for offering these payment methods. However, setting up such an online store with a functional payment gateway can be challenging, time-consuming and expensive for small retailers that do not have the expertise. Even with e-Commerce website builders that offer online retailers a suite of services including payments, marketing, shipping and customer engagement tools to simplify the process of running an online store for small retailers, these retailers would still need to pay for these services and spend time on copywriting and go through a se-

²⁷ PayNow is a peer-to-peer funds transfer service available to retail customers of nine participating banks in Singapore – Bank of China Singapore branch, Citibank Singapore Limited, DBS Bank Limited/Post Office Savings Bank, Hongkong and Shanghai Banking Corporation Limited, Industrial and Commercial Bank of China Limited, Maybank Singapore Ltd, Oversea-Chinese Banking Corporation Limited, Standard Chartered Bank (Singapore) Limited and United Overseas Bank Ltd. PayNow offers an enhanced funds transfer experience that enables retail customers of the nine participating banks to send and receive Singapore Dollar funds from one bank to another in Singapore by using just their mobile number or Singapore national registration identity card number or foreign identification number, almost instantly. The sender no longer needs to know the recipient's bank and account number when transferring money via PayNow. PayNow, launched on July 10, 2017 is provided free to retail customers to corporates, businesses, Singapore Government agencies, associations and societies through PayNow Corporate of participating banks. More information about PayNow can be accessed via https://www.abs.org.sg/consumer-banking/pay-now.

²⁸ Thailand's national money transfer and e-payment system PromptPay, is a service that enables Thai citizens to easily receive and transfer funds, using their Citizen ID or mobile phone number instead of a bank account number, via electronic channels – namely internet banking, mobile banking and automated teller machines. Foreigners can use their passport as an identification document and register for PromptPay, connecting only to their mobile phone number with their preferred account. PromptPay was launched in January 2017. More information on PromptPay can be accessed via https://www.bangkokbank.com/en/Personal/Digital-Banking/ PromptPay and https://www.bangkokpost.com/learning/learning-news/1261237/promptpaya-big-success.

ries of processes to link the payment systems to their online store.²⁹ While retailers can outsource such work to web companies, the costs involved may not be an amount that small retailers with very thin profit margins are willing or able to pay. With interoperable payment services that connect national money transfer systems, small retailers can showcase their products on any online platform, such as internet forum pages and social media sites that may not offer payment system integration, and transact with customers separately without the hassle of building an online store and incurring additional transaction fees.

The speed at which super apps have expanded their offerings has brought about benefits to our society and there remains potential for them to do more, especially with respect to cross-border e-Commerce. It could thus be difficult to imagine a day when the very super apps that have provided us with these benefits could produce harmful outcomes instead. However, lessons should always be drawn from the plethora of examples of similarly innovative offline businesses abusing their respective dominant market positions by preventing rivals from competing on the merits and offering consumers competing products previously not available on the market. Just like their non-digital counterparts, businesses that operate super apps are, in principle, capable of leveraging on a dominant market position to harm competition in various different markets if they engage in exclusionary conduct, such as by preventing merchants from using other apps, platforms or payment systems.

III. THE ROLE OF COMPETITION LAW AND POLICY

While super apps may, at present, have been received with enthusiasm by consumers who benefit from their wide array of features, should we nevertheless be concerned that they might eventually dominate the e-Commerce landscape to such an extent that they might impair competition in the digital marketplace? For example, a super app that has a dominant position in one market may offer its consumers bundled discounts (discounts for using the same app for more than one type of service) in order to encourage its users in this market to also use its app for other services in different markets. If the super app successfully attracts a large enough number of such consumers to use the super app for services in other markets due to the bundled

²⁹ For example, online business owners who wish to link their PayPal account to their bank account would have to wait for PayPal to send two small deposits to their bank account and subsequently check the bank account statement and enter the two amounts of the deposits on their PayPal account. For online business owners who wish to link their PayPal accounts to their credit card accounts would have to wait for PayPal to charge 3 Singapore Dollars to their bank account and send a 4-digit PayPal code to them. Subsequently, the user would have to check his or her card statement for the code and enter it on their PayPal account. These steps do not include those that an online business owner may need to undertake to ensure that the relevant coding or necessary steps are taken to integrate the PayPal payment facility with the e-Commerce website to process online orders and/or refunds.

discounts, the resultant "network effects" may compel businesses in other markets to use that super app to access their consumers. If other apps without the market power are unable to replicate such strategies, would businesses ultimately be forced to list on these dominant platforms or to use their payment services exclusively? Should competition law regard a business's pursuit of strategic measures to magnify the indirect network effects associated with the multi-sided markets they operate within as abusive conduct? For example, super apps that utilize such exclusionary conduct to sustain their dominance after driving out competitors may, subsequently be able to charge higher fees from businesses and consumers that transact on their platforms, raising the cost of cross-border trade for everyone. Without facing robust competition, owners of super apps may not be incentivized to engage in continuous product innovation unless the legal and regulatory environment ensures market remains contestable, systems remain open and interoperable, and pricing practices remain transparent. The absence of new competitors could also deprive the market of a pool of innovators that could have been able to provide innovative solutions that address challenges of regional e-Commerce development, such as in the area of cross-border payment and crossborder logistics. The resulting harm to competition and the welfare of society might end up outweighing the benefits that such services have bestowed upon us thus far. Fortunately, we are not entirely defenseless against these scenarios, though there may be some debate over whether pre-emptive measures should be taken or if actions can be taken only after harm has actually materialized. Legal and regulatory mechanisms can be deployed to facilitate market contestability, interoperability and transparency.

This is where competition law and policy can play a role. Competition policy and law can deter and rectify anticompetitive behavior that might jeopardize market contestability. In 2018, the acquisition of Uber by Grab showed how quickly a merger of online players could be completed and made irreversible. On March 26, 2018, Grab and Uber announced and completed the sale of Uber's Southeast Asia business to Grab in consideration of Uber holding a 27.5 percent stake in Grab, and began the transfer of the acquired assets immediately. On March 27, 2018, the Competition and Consumer Commission of Singapore ("CCCS") commenced an investigation into the transaction which constitutes a merger under the Competition Act and found that the merger had led to a substantial lessening of competition in the provision of ridehailing platform services in Singapore. Specifically, CCCS's investigation³⁰ found that the merger had removed Grab's closest competitor in ride-hailing platform services, allowing Grab to increase its prices after removing its closest competitor, the effects of which were reinforced by the imposition of exclusivity arrangements that hampered potential competitors from achieving an operational scale necessary to compete

³⁰ CCCS issued its infringement decision against Grab and Uber in relation to the sale of Uber's Southeast Asian business to Grab for a 27.5 percent stake in Grab on September 24, 2018.

effectively against Grab.³¹ Besides penalizing the merger parties for the irreversible harm³² to competition between ride-hailing platforms, the CCCS also imposed directions on the parties to restore market contestability. These directions included stopping exclusive arrangements to keep the market open and encourage new entry.³³ The market saw the entry of GoJek a few months later.³⁴ In another example to safeguard market contestability, the CCCS investigated an online food ordering and delivery services provider for its exclusive arrangements with restaurants which prevented the restaurants from using other providers' services in 2016. Although CCCS did not take enforcement action³⁵ as competition has not been harmed in that case and the online food delivery industry was found to be vibrant with new entrants competing aggressively with market shares changing significantly, it cautioned market players that exclusive arrangement could be problematic in the future if competition was harmed after dominance was achieved; businesses were encouraged to compete on merit so as to achieve a more vibrant market with more choices for restaurants and consumers, instead of relying on exclusive dealing practices.³⁶ The industry has since grown tremendously. In addition, CCCS launched an investigation in September 2019 to look into concerns over the practice of online delivery providers in relation to the rental of kitchens to F&B outlets, including the use of exclusive agreements by online delivery providers (which also operate shared kitchen premises that they lease out to food and beverage operators) to prevent tenants of their shared kitchens from using the online food delivery services of their landlords' rivals, as well as the refusal of delivery service providers to offer their services to F&B outlets that were tenants of shared kitchens

³¹ Grab had imposed exclusivity obligations on taxi companies, car rental partners, and some of its drivers.

³² More information on CCCS's investigation can be accessed via https://www.cccs.gov. sg/public-register-and-consultation/public-consultation-items/uber-grab-merger?type=public_register.

³³ More information on the directions and financial penalties imposed by CCCS on Grab and Uber can be accessed via https://www.cccs.gov.sg/media-and-consultation/newsroom/media-releases/grab-uber-id-24-sept-18.

³⁴ More information on GoJek's entry can be accessed via https://www.gojek.com/sg/blog/gojek-extends-beta-phase-to-all-consumers-in-singapore/.

³⁵ While competition law in Singapore does not *per se* prohibit businesses from achieving market power or striving towards it, businesses with a dominant market position are prohibited from preventing their competitors from competing effectively or shutting them out of the market through exclusive business practices such as exclusive agreements with their suppliers or customers. If such conduct is found to harm competition, CCCS can take enforcement action.

³⁶ More information on CCCS's investigation into the online food delivery industry in 2016 can be accessed via https://www.cccs.gov.sg/media-and-consultation/newsroom/media-releas-es/investigation-of-online-food-delivery-industry.

run or owned by their competitors. ³⁷ While no enforcement action was taken by CCCS, it should be noted that these online food delivery providers who also operated shared kitchen premises started supplying their online food delivery services to tenants of competing shared kitchens after the commencement of CCCS's investigations. As a result, food and beverage operators operating out of non-affiliated virtual kitchens now have access to multiple online food delivery service providers, thereby expanding their pool of potential customers and increasing competition among affiliated and non-affiliated virtual kitchens. With greater competition in the virtual kitchen sector, consumers who use food delivery apps will have a greater range of food options to choose from, while affiliated and non-affiliated virtual kitchens will be incentivized to innovate when they have to compete against each other.³⁸

In an earlier case involving interoperability, CCCS worked with a payment service provider to remove restrictions that prevented merchants from accepting other payment cards on common payment terminals. With these restrictions, merchants that wished to accept different payment methods would have had to install different terminals, when otherwise a common terminal could have been used. CCCS found that the restriction by the payment service provider prevented competitors from offering their services to merchants, thus limiting competition from competitors and undermined the interoperability of payment terminals.

The ability of consumers to easily and accurately compare and choose between alternatives is important for e-Commerce growth. Yet, consumers may be discouraged from participating in e-Commerce due to a lack of trust in online transactions caused by low levels of transparency and consumer safeguards against the associated harm. The emergence and rapid growth of online platforms such as marketplaces and price comparison websites ("PWCs") have made price comparison significantly easier for consumers, which reduces search costs for consumers. This increase in price transparency has also intensified price competition. Online reviews and ratings on various platforms such as marketplaces and PWCs help consumers make more informed choices. Unfortunately, consumer reservations about false and misleading information can affect the development of e-Commerce despite some progress made on this front. For example, the way prices are displayed can influence consumers' decisions. Consumers make fully informed purchasing decisions when accurate prices are displayed fully and clearly upfront. However, e-Commerce platforms sometimes engage in misleading price practices such as drip pricing, false time-limited discounts and "free" offers to entice customers. These misleading pricing practices thwart consum-

³⁷ More information on CCCS's probe into the online food delivery sector in October 2019 can be accessed via https://www.straitstimes.com/singapore/probe-into-online-food-delivery -sector.

³⁸ https://www.cccs.gov.sg/media-and-consultation/newsroom/media-releases/online-food-delivery-and-virtual-kitchen-sector-5-aug-20.

ers' ability and efforts to make informed purchasing decisions, which then impedes the ability of honest rival businesses to compete with such errant market players on a level playing field.

Recognizing the importance of the digital economy and the growth of e-Commerce, the CCCS recently conducted a study on the online provision of bookings for flight tickets and hotel accommodation to Singapore consumers. The study examined various business practices adopted by the industry players, and the associated competition and consumer issues, including misleading prices³⁹ displayed by suppliers.⁴⁰ Following on from this study, CCCS is developing a set of guidelines on price transparency which will address various questionable pricing practices such as "drip pricing" and "pre-ticked boxes," discounts, use of the term "free" and price comparisons (with other suppliers).⁴¹ By educating suppliers on when pricing practices may be potentially misleading, such practices can be reduced over time, thereby enabling consumers to shop confidently online.

IV. COOPERATION AMONG COMPETITION AUTHORITIES IN ASEAN

While competition authorities are able to take enforcement action against anti-competitive activities, the cross-border nature of e-Commerce platforms may pose enforcement challenges. Antitrust jurisdiction is based on the impugned conduct having adverse effects on competition within the territorial jurisdiction over the national competition authority, but the businesses involved in the anticompetitive conduct may be located overseas. For example, some e-Commerce websites may target domestic consumers but have limited physical presence domestically. This highlights the importance of regional cooperation among competition authorities to achieve effective competition enforcement. Competition authorities in ASEAN have already begun to work together on common challenges. For example, CCCS cooperated with competition authorities in Malaysia, Philippines and Vietnam on the Grab/Uber merger, sharing non-confidential information. Memorandums of understanding ("MOUs") between ASEAN competition authorities can help to facilitate enforcement cooperation, which is particularly relevant to tackling cross-border issues and common challenges. CCCS has signed an MOU with the Indonesia Competition Commission in 2018 to encourage notification of enforcement activities that potentially affect one

³⁹ CCCS has statutory powers to gather evidence against retailers who engage in such practices, file injunction applications against them and enforce compliance with injunction orders issued by the courts.

⁴⁰ CCCS's market study into the Online Travel Booking Sector in Singapore can be accessed via https://www.cccs.gov.sg/resources/publications/market-studies.

⁴¹ More information on the CCCS's proposed guidelines on price transparency can be accessed via https://www.cccs.gov.sg/media-and-consultation/newsroom/media-releases/otband-price-transparency-guidelines-30-sept-19.

authority's interests, facilitate exchange of information between the two authorities, and support enforcement coordination for cases of mutual interest.⁴² The MOU will also contribute towards more consistent and effective outcomes and remedies, which will, in turn, provide businesses with greater regulatory certainty.

Alongside enforcement cooperation, ASEAN competition authorities have come together to build and strengthen their capabilities to identify and address anticompetitive activities in the e-Commerce sector. This has been done, for example, through the development of a competition assessment framework for competition issues in e-Commerce sector, training programs and educational materials such as the Handbook on e-Commerce and Competition in ASEAN,⁴³ which was developed by the CCCS. ASEAN Member States are also taking important steps to bridge digital divides through the ASEAN Digital Integration Framework⁴⁴ which enables ASEAN Member States to prioritize⁴⁵ existing policy actions, including facilitating digital trade and innovation, while enabling seamless digital payments.

Similar attention has been paid to the development of consumer protection regimes as the part of the AEC Blueprint. The first publication on consumer protection regimes in ASEAN – the Handbook on ASEAN Consumer Protection Laws and Regulations⁴⁶ is part of the important process of providing consumers access to information and building awareness.

The aim of establishing a regional trade bloc requires a competitive ASEAN region as a whole, achievable only through deep cooperation across every ASEAN member on various fronts, including competition and consumer protection.

⁴² More information in relation to the MOU and a copy of the MOU can be accessed via https://www.cccs.gov.sg/media-and-consultation/newsroom/media-releases/kp-pu-cccs-mou-enforcement-coorperation-30-aug-18.

⁴³ The Handbook on e-commerce and Competition in ASEAN can be accessed via https:// cccs.gov.sg/resources/publications/other-publications/asean-ecommerce-handbook.

⁴⁴ More information on the ASEAN Digital Integration Framework can be accessed via https://asean.org/storage/2019/01/ASEAN-Digital-Integration-Framework.pdf.

⁴⁵ The ASEAN Digital Integration Framework enables ASEAN Member States to prioritize existing policy actions that will deliver the full potential of digital integration. Facilitating seamless trade, protecting data while supporting digital trade and innovation, enabling seamless digital payments, broadening digital talent base, fostering entrepreneurship and coordinating different actions of the ASEAN Digital Integration Framework have been identified as priority areas in the immediate term address the critical barriers and accelerate existing ASEAN platforms and plans to realize digital integration.

⁴⁶ The Handbook on ASEAN Consumer Protection Laws and Regulations can be accessed via https://asean.org/wp-content/uploads/2018/05/Handbook-on-ASEAN-Consumer-Protection-Laws-and-Regulation.pdf.

V. ENSURING THAT GOVERNMENT POLICIES AND REGULATIONS ALSO SUPPORT MARKET ACCESS

As competition can also be affected by government policies and regulations, government agencies should ensure that their policies and regulations provide a conducive environment for businesses to grow and expand into new markets. Nurturing a regional ecosystem that is friendly and conducive to ASEAN e-Commerce growth requires the authorities to understand the impact of their actions on competition and market access, which plays a critical role in developing the AEC's e-Commerce landscape. National competition authorities can play the advisory roles to other government agencies in evaluating the impact of their policies on e-Commerce so as to avoid any unintended negative consequences on competition.

For example, in developing the physical infrastructure necessary to support e-Commerce in Singapore, the government-initiated Locker Alliance⁴⁷ piloted by the Infocomm and Media Development Authority ("IMDA")⁴⁸ in end 2018 adopted an open access delivery network comprising of parcel lockers and collection points to enable consumers to collect parcels at their convenience. The Locker Alliance brought together industry players from different segments of the e-Commerce supply chain, including locker operators, logistics service providers and e-marketplaces onto one interoperable platform. In Singapore, lockers are used as convenient delivery pickup points given their functional contribution to the "last mile" segment of the delivery process. With parcels being sent to a conveniently located locker, consumers will never have to miss a delivery to their homes and are able to retrieve their items easily by entering an authentication code.⁴⁹ This extensive network ensures that consumers will have easy access to the locker stations that are near their homes, or along the routes of their daily commute on the public transport network. With the growth of e-Commerce in Singapore, open access to the "last mile" delivery infrastructure has become a key component to building and retaining a solid customer base. The coordinated policy efforts which have given consumers timely and convenient access to their e-Commerce purchases have also given logistic service providers and online merchants the ability to deploy cost-efficient strategies to meet the demands of an ever-growing customer base. In addition, this initiative has the potential to reduce the distance travelled by delivery drivers and increase the number of parcels that can be delivered a day. This, in turn, will support the exponential growth in e-Commerce locally and regionally. In developing this initiative, the government was mindful of the need to

⁴⁷ More information about the Locker Alliance can be accessed via https://www.lockeralliance.net/.

⁴⁸ The IMDA is a statutory board in the Singapore government. It develops and regulates the infocomm and media sectors.

⁴⁹ More information on the pilot can be accessed via https://www.opengovasia.com/imda-launches-pilot-for-singapores-federated-locker-initiative/.

ensure that the system was open and interoperable, thereby preventing any market player from excluding their rivals from using this national infrastructure. For example, the platform is designed to allow different locker operator networks to function alongside each other. Using a standardized data interchange, it creates a transparent, secure and consistent user experience across the delivery process. Through the platform, each operator will utilize a standardized service mediation layer to orchestrate the "last mile" delivery segment. Currently, individual locker operators may be using different unique proprietary programs but the Locker Alliance allows any operator to join the Alliance easily by simply switching to the standards prescribed in the application programming interface it has adopted. This makes it easier for new market players to scale up their operations and reach multiple locations.⁵⁰

Competition authorities can also work with other government agencies to address emerging issues that affect e-Commerce, especially when they cut across competition and other domains, such as balancing the benefits to consumers and businesses of data portability with its compliance costs for businesses. Recognizing how empowering consumers with greater control over their data can support the growth of digital economy and trade, CCCS also partnered with the Personal Data Protection Commission ("PDPC") ⁵¹ to study data portability and how it can be introduced to support a digital economy.⁵² For example, online shoppers can have their shopping history at one e-Commerce provider transferred to another platform, allowing the latter to extend more tailored offers from the get-go with data portability. These ongoing discussions with different regulators ensure that various issues that could affect e-Commerce development can be concurrently monitored, and hopefully, addressed.

E-Commerce will continue to play an increasingly significant role in the way the ASEAN nationals consume goods and services, and will continue to be a key front for ASEAN economic integration. For ASEAN to fulfil its e-Commerce growth potential, competition law and policy can be deployed as a regulatory tool to facilitate development of a vibrant digital ecosystem for the benefit of both businesses and consumers across the region.

⁵⁰ More information on the launch of the Locker Alliance pilot and the steps taken to ensure interoperability between parcel locker networks operated by various operators can be accessed via https://www.opengovasia.com/imda-launches-pilot-for-singapores-federated-locker-initiative/.

⁵¹ The PDPC was established on January 2, 2013 to administer and enforce the Personal Data Protection Act 2012 (PDPA). More information of the PDPC can be accessed via https://www.pdpc.gov.sg/About-Us/Who-We-Are.

⁵² More information on the discussion paper on data portability and a copy of the discussion paper can be accessed via https://www.cccs.gov.sg/resources/publications/occasional-research-papers/pdpc-cccs-data-portability.

Editors' bios



David S. Evans' academic work has focused on industrial organization, including antitrust economics, with a particular expertise in multisided platforms, digital economy, information technology, and payment systems. He has authored eight books, including two award winners, and more than one hundred articles in these areas. He has developed and taught courses related to antitrust economics, primarily for graduate students, judges and officials, and practitioners, and have authored handbook chapters on various antitrust subjects.

David's expert work has focused on competition policy and regulation. He has served as a testifying or consulting expert on many significant antitrust matters in the United States, European Union, and China. He has also made submissions to, and appearances before, competition and regulatory authorities with respect to mergers and investigations in those and other jurisdictions. David has worked on litigation matters for defendants and plaintiffs, on mergers for merging parties and intervenors, and for and in opposition to competition authorities.



Allan Fels AO graduated in economics (first class honors) and law from the University of Western Australia in 1965. He has a PhD in Economics from Duke University and was a research fellow in the Department of Applied Economics at the University of Cambridge from 1986-1972, where he wrote The British Prices and Incomes Board (Cambridge University Press, 1972).

On his return to Australia Professor Fels joined the Economics Department of Monash University as a Senior Lecturer, before becoming Professor of Administration and Director of the Graduate School of Management from 1984 until 1991.

The career of Professor Fels in Australia falls into two parts. He was generally regarded as the nation's leading regulator, serving as inaugural Chair of the Australian

Competition and Consumer Commission (and its predecessor bodies) from 1989 until 2003. The Australian Competition and Consumer Commission is the country's regulator of competition law and consumer law; it also regulates public utilities in the telecommunications and energy industries (in a similar manner to industry-specific bodies such as Ofcom in the UK and FCC in the US). He has had numerous other regulatory roles (for example, in insurance, agriculture, telecommunications, and aviation).

Professor Fels remains a leading figure globally in competition policy. He co-chaired the OECD Trade and Competition Committee from 1996 to 2003 and continues regularly to be a keynote speaker at major global competition events including the world's two peak events, the International Competition Network Annual Conference and the OECD Global Competition Forum.

He was a participant in the 15-year process of drafting the Chinese Antimonopoly Law 2008 and currently advises the Chinese government on the law's implementation. Academically, he is co-director of the Competition Research Centre at the Chinese Academy of Science, a prestigious position, and an international adviser to the Chinese Academy of Social Science.

The second part of Professor Fels' career has been academic. He was appointed Foundation Dean of the Australia and New Zealand School of Government and served in that position from 2003 until 2012. The predominant activity of the School has been the provision of management development programs to senior public servants in the two countries. There is also a substantial research program and other professional and outreach activities.



Catherine Tucker is the Sloan Distinguished Professor of Management and a Professor of Marketing at MIT Sloan. She is also Chair of the MIT Sloan PhD Program.

Her research interests lie in how technology allows firms to use digital data and machine learning to improve performance, and in the challenges this poses for regulation. Tucker has particular expertise in online advertising, digital

health, social media, and electronic privacy. Her research studies the interface between marketing, the economics of technology, and law.

She has received an NSF CAREER Award for her work on digital privacy, the Erin Anderson Award for an Emerging Female Marketing Scholar and Mentor, the Garfield Economic Impact Award for her work on electronic medical records, the Paul E. Green Award for contributions to the practice of Marketing Research, the William F. O'Dell Award for most significant, long-term contribution to Marketing, and the INFORMS Society for Marketing Science Long Term Impact Award for long-run impact on marketing.

She is a cofounder of the MIT Cryptoeconomics Lab which studies the applications of blockchain and also a co-organizer of the Economics of Artificial Intelligence initiative sponsored by the Alfred P. Sloan Foundation. She has been a Visiting Fellow at All Souls College, Oxford. She has testified to Congress regarding her work on digital privacy and algorithms, and presented her research to the OECD and the ECJ.

Catherine Tucker is coeditor at Quantitative Marketing and Economics, associate editor at Management Science, Marketing Science, and the Journal of Marketing Research and a research associate at the National Bureau of Economic Research. She teaches MIT Sloan's course on Pricing and the EMBA course "Marketing Management for the Senior Executive." She has received the Jamieson Prize for Excellence in Teaching as well as being voted "Teacher of the Year" at MIT Sloan.

She holds a PhD in economics from Stanford University and a BA from the University of Oxford.

Authors' Bios

Reiko Aoki has been Commissioner of the Japan Fair Trade Commission since 2016. She has conducted research and published on the economics of patents, patent pools, standards, innovation and intergenerational political economy in academic positions at the Ohio State University, SUNY Stony Brook, University of Auckland and Hitotsubashi University. She is Professor Emeritus of Hitotsubashi University. She has served as Executive Member of the Council for Science and Technology Policy, Japanese Cabinet Office 2009-2014, Member of the Information and Communication Council 2014-2016 and Member of Science Council of Japan 2014-2016. Prior to joining the JFTC, she was Executive Vice-President (International, Gender Equality, and Intellectual Property) at Kyushu University. She received her B.S. in mathematics from University of Tokyo, M.A. in economics from University of Tsukuba, and PhD in economics and MS in statistics from Stanford University. She is currently President of the Japanese Law and Economic Association, and Executive Board Member of the Japanese Economic Association.

Robert D. Atkinson is founder and president of the Information Technology and Innovation Foundation ("ITIF"), the world's leading think tank for science and technology policy. He is an internationally recognized scholar, a widely published author, and a trusted adviser to policymakers around the world, with expertise in the broad economics of innovation and specific policy and regulatory questions around new and emerging technologies. Rob's most recent book, co-authored with Michael Lind, is Big Is Beautiful: Debunking the Myth of Small Business.

Before founding ITIF, Atkinson was Vice President of the Progressive Policy Institute and Director of PPI's Technology & New Economy Project. He received his Masters in Urban and Regional Planning from the University of Oregon and was named a distinguished alumnus in 2014. He received his Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill in 1989.

Simon Bishop is co-founder and Partner at RBB Economics. He has over 20 years' experience of providing expert economic advice in competition law matters and has advised on several hundred cases before competition authorities and courts around the world. Clients for whom Simon has acted as lead economist on several occasions include GE, British Airways, FA Premier League, Bertelsmann, Sony, and BHP Billiton.

Simon has published widely including reports and articles on market definition, non-horizontal mergers, bidding markets, loyalty rebates and vertical restraints. He is the co-author of The Economics of EC Competition Law (3rd edition, Sweet & Maxwell, 2009), a leading textbook on the application of economics to European competition law, and is co-editor of the European Competition Journal.

Aleksandra Boutin is a Founding Partner of Positive Competition. She is featured in the Who's Who Legal: Thought Leaders - Competition, a ranking listing the world's leading competition professionals. She has more than fifteen years of experience in competition policy as an enforcer, consultant and academic. She is a member of the Scientific Council of the GCLC and a Non-Governmental Advisor for Poland in the ICN.

Aleksandra advises clients on a wide range of competition issues in the context of competition proceedings in front of the European Commission, National Competition Authorities and Courts. Her recent experiences involve cartel overcharge analysis, vertical and horizontal mergers, exclusionary and exploitative abuses, state aid and information exchanges. She has also advised clients in antitrust cases involving digital platforms in e-commerce and in the software industry.

On the policy front, she was the lead author of the European Commission's Guidelines on Horizontal Cooperation Agreements and Block Exemption Regulations, she participated in preparing the communication of the Commission on quantifying harm in antitrust damage actions and in the Commission's IP Guidelines.

Aleksandra holds a Master in Theoretical Economics and Econometrics from Toulouse School of Economics, and a Master in European Law and Economic Analysis from the College of Europe. She completed her PhD studies at the Université Libre de Bruxelles.

Xavier Boutin is a founding partner at Positive Competition and an adjunct professor of economics at the Université libre de Bruxelles. He holds a PhD in Economics from EHESS (Paris School of Economics). He is featured in the Who's Who Legal Thought Leader: Competition, a ranking listing the world's leading competition professionals. Xavier is also a founding and board member of l'Entente, the association of French speaking antitrust practitioners in Brussels.

Xavier leads a team of consultants advising clients in the context of merger, State Aid and antitrust proceedings in front of the European Commission and national competition authorities. Prior to founding Positive Competition, Xavier was an expert in an international consultancy. Before joining the private sector, he spent almost eight years in the Chief Economist Team of the European Commission's DG Competition.

Xavier made a major contribution to the EU Commission's Article 102 guidance paper, its Article 101 horizontal guidelines and the accompanying Block Exemption Regulation ("BER"). He also contributed to the State Aid Modernization, in particular, in the areas of R&D&I and Regional Aid.

Xavier's most recent work includes the assessment of vertical and horizontal mergers. In addition, Xavier has led many investigations involving exclusionary and exploitative abuses in the digital platform sector. These include the assessment of vertical restraints and self-preferencing in e-commerce, as well as Article 102 cases in the software industry.

Burcu Can graduated from Ankara University, Faculty of Law in 2008. Over five years of her close to 10 years of career in competition law was devoted to the Turkish Competition Authority as a competition expert case handler. Burcu has obtained her LL.M. degree from Harvard Law School and worked for many years at the Brussels office of one of the top international law firms as a competition lawyer. During her years at the Turkish Competition Authority, Burcu took part in leading antitrust and merger cases concerning banking, finance, motor vehicle and transportation sectors, contributed to the preparation of secondary legislation for competition law and several International Competition Network projects. In addition to her LL.M. degree from Harvard Law School, Burcu also has a master's degree in commercial law from Gazi University in Turkey. Burcu is a member of the New York Bar and the Istanbul Bar.

Sayanti Chakrabarti is the Joint Director in the Economics Division of the Competition Commission of India, where she is responsible for carrying out economic analysis of antitrust and merger cases. She has also contributed to several research outputs of the Division on competition law and policy. Prior to joining the CCI in 2010, Sayanti worked with the Economic Affairs Team of the Federation of Indian Chambers of Commerce and Industry, where she contributed to a number of surveys and studies on issues of importance to the Indian business and economy. She holds an MSc in Economics from Calcutta University.

Naval Satarawala Chopra is a partner at Shardul Amarchand Mangaldas and has been practicing competition law since its inception in India. He is the first Indian lawyer in GCR's top "40 under 40" competition lawyers in the world (2015); listed as a global "thought leader" (Who'sWhoLegal); and recognized regularly as a leading advisor in Chambers & Partners.

Naval has been involved in some of the most prominent abuse of dominance cases in India. He is particularly skilled in advising on antitrust aspects of technology related matters, having successfully defended WhatsApp in relation to its privacy policy and separately digital payments services, Microsoft Corporation in relation to software licensing terms and Uber in relation alleged predatory pricing, before the Competition Commission of India ("CCI").

Naval has recently advised Facebook in its acquisition of minority shareholding in India's fastest growing telecom company. He has also advised in Avago's acquisition of Broadcom, Ctrip's investment in MakeMyTrip, the failed merger of Publicis and Omnicom as well as the conditional approval for Bayer AG's acquisition of Monsanto Company.

Naval also advises a number of clients in cartel cases and is involved in challenges on account of due process and natural justice issues before the Supreme Court of India.

David S. Evans' academic work has focused on industrial organization, including antitrust economics, with a particular expertise in multisided platforms, digital economy, information technology, and payment systems. He has authored eight books, including two award winners, and more than one hundred articles in these areas. He has developed and taught courses related to antitrust economics, primarily for graduate students, judges and officials, and practitioners, and have authored handbook chapters on various antitrust subjects.

David's expert work has focused on competition policy and regulation. He has served as a testifying or consulting expert on many significant antitrust matters in the United States, European Union, and China. He has also made submissions to, and appearances before, competition and regulatory authorities with respect to mergers and investigations in those and other jurisdictions. David has worked on litigation matters for defendants and plaintiffs, on mergers for merging parties and intervenors, and for and in opposition to competition authorities.

Máté Fodor is an Economist at Positive Competition. Prior to joining the company, he was an assistant professor of Econometrics and Game Theory at the International School of Economics, a University of London affiliate institution. Máté holds a MSc. in Economics from Trinity College Dublin, where he was the recipient of the Terrence Gorman Prize for valedictorian. After consulting missions for the public sector authorities, he joined ECARES at the Université libre de Bruxelles to obtain his PhD in Economics. He has secured research funding from several prestigious grants, such as the Marie Curie Framework and FNRS. His research profile is diverse with peer-reviewed publications in political economy, labor, energy, development, and media economics.

Since joining Positive Competition, Máté has worked on abuse of dominance cases involving digital platforms in the e-commerce and software industries. Máté has also been involved in overcharge and damages estimations in the construction and primary resources industries. He has also contributed to the economic assessment of mergers.

Gönenç Gürkaynak is a founding partner of ELIG Gürkaynak Attorneysat-Law, a leading law firm of 90 lawyers based in Istanbul, Turkey. Mr. Gürkaynak graduated from Ankara University, Faculty of Law in 1997, and was called to the Istanbul Bar in 1998. Mr. Gürkaynak received his LL.M. degree from Harvard Law School in 2001, and is qualified to practice in Istanbul, New York, Brussels, and England and Wales. Before founding ELIG Gürkaynak Attorneys-at-Law in 2005, Mr. Gürkaynak worked as an attorney at the Istanbul, New York, and Brussels offices of a global law firm for more than eight years of his total of 23 years of career in private practice so far. Mr. Gürkaynak heads the competition law and regulatory department of ELIG Gürkaynak Attorneys-at-Law, which currently consists of 45 lawyers. He has unparalleled experience in Turkish competition law counselling issues with more than 23 years of competition law experience, starting with the establishment of the Turkish Competition Authority. Mr. Gürkaynak frequently speaks at local and international conferences and symposia on competition law matters. He has published more than 200 articles in English and Turkish by various international and local publishers, and he has published three books. Mr. Gürkaynak also holds teaching positions at undergraduate and graduate levels at two universities, and gives lectures in other universities.

Peter K. Huston is a partner in the San Francisco office of Baker Botts. He has 30 years of experience in high-stakes civil and criminal antitrust litigation, trials, government investigations, class actions and merger clearance work, both in and out of government. In 2020 he was recognized in the 27th Edition of Best Lawyers in America. Prior to joining Baker Botts, Peter served as Assistant Chief in the San Francisco Office of the Antitrust Division of the United States Department of Justice where he led and supervised both criminal price-fixing matters and civil merger matters. For his government service, Peter was awarded the Attorney General's Distinguished Service Award and was twice awarded the Antitrust Division's Award of Distinction. He also received the California Lawyer Attorney of the Year Award in 2013 and was named to the Daily Journal Top 100 Lawyers in 2012. Peter currently serves on the Executive Committee of the California Lawyers Association Antitrust, Unfair Competition and Privacy Law Section and the ABA International Cartel Task Force.

Tetsuya Kanda has been a Senior Planning Officer in Legal System Planning Division, Consumer Affairs Agency ("CAA") of Japan, since July 2019. In the current capacity, he is in charge of an initiative to reinforce the Whistleblower Protection Act.

Prior to the current position, he held various positions in the Japan Fair Trade Commission ("JFTC"), in both fields of investigation and policymaking. Mostly recently, he was a Senior Planning Officer for Investigation from 2017 to 2019, where he dealt with procedural and substantive issues of investigations against major technology firms. His past responsibility in the JFTC includes drafting of law amendments strengthening public enforcement of the Japanese Antimonopoly Act and its "monopoly" guidelines.

He was seconded to the Directorate-General for Competition of the European Commission from 2012 to 2013.

He holds a Master of Public Policy from the University of Michigan and a Bachelor of Laws from the University of Tokyo. He also teaches the Japanese competition law at the Graduate School of Law, Meiji University in Tokyo.

Joe Kennedy is a senior fellow at ITIF. For almost 30 years he has worked as an attorney and economist on a wide variety of public policy issues. His previous positions include chief economist with the U.S. Department of Commerce and general counsel for the U.S. Senate Permanent Subcommittee on Investigations. He is president of Kennedy Research, LLC, and the author of Ending Poverty: Changing Behavior, Guaranteeing Income, and Transforming Government (Rowman & Littlefield, 2008). Kennedy has a law degree and a master's degree in agricultural and applied economics from the University of Minnesota and a Ph.D. in economics from George Washington University.

Maria Khan is a Research Associate in the Economics Division of the Competition Commission of India. She has over five years of work experience in the field of Competition Law and Policy. She is responsible for carrying out economic assessment of antitrust conduct cases and mergers and acquisitions, competition advocacy and research related to competition law and policy. Maria is an Economist by qualification and holds an M.Phil. in Economics degree from Jawaharlal Nehru University, New Delhi and a Post Graduate degree in Economics from Jamia Millia Islamia, New Delhi.

Thomas Kramler is head of the unit dealing with e-Commerce and the data economy in the European Commission's Directorate General for Competition. Before that, he was Head of the Digital Single Market Task Force responsible for the e-commerce sector inquiry. Mr. Kramler holds a law degree and a PhD from the University of Vienna, Austria. He has graduated with a Master's degree in European Community Law from the College of Europe (Bruges).

Previously Mr. Kramler was deputy head of the unit responsible for antitrust cases in the information industries, internet and consumer electronics sectors. Before joining the European Commission, Mr. Kramler worked as agent representing the Austrian government before the European Courts in Luxemburg.

Andrew Low is a senior lawyer in Gilbert + Tobin's competition and regulation group. Andrew's practice is directed to providing complex advice and advocacy for clients in complex and high-profile matters across each core area of the Competition and Consumer Act (including complex merger clearance, enforcement investigations, industry inquiries, and dispute resolution).

Andrew has a particular expertise and interest in, and has contributed significant thought leadership to, digital issues for competition policy and regulation. This includes chairing sessions including with the ACCC Chairman and international experts Maurice Stucke and Ariel Ezrachi on reflections on the Digital Platforms Inquiry and whether Robots Can Collude?. He has authored a number of papers including Decoding the Data Lifecycle, ACCC signals a changing approach to digital M&A, Digital Reform unfolds, and Impact of competition policy on data access and management, and the soon to be published Digital Competition Australia 2021 (Lexology/GTDT). He has spoken_at the Law Council of Australia's Rising Stars 2019 Conference on digital competition policy.

Such thought leadership is supported by in-depth commercial experience advising large tech companies. He is widely recognised by key clients as a rising star competition lawyer and is sought after by clients for his digital economy expertise.

Payal Malik is Adviser, Economics and Head of the Economics Division at the Competition Commission of India. She is on secondment from PGDAV College,

University of Delhi, where she is an Associate Professor of Economics. Her areas of expertise are competition law, policy and regulation. She has several years of research and economic consulting experience in network Industries such as power and telecommunication, ICTs, Innovation systems, and Infrastructure.

Her research and professional collaborations have been with NCAER, Delhi, OECD, Orbicom, IDEI, University of Toulouse, University Of Québec at Montreal, CEPR, JRC, European Commission, IPTS Seville, ICEGEC, Hungary, Department of Information Technology, TRAI, Ministry of Power, Ministry of Information and Broadcasting, Planning Commission of India, CSO, India, WSP-SA, World Bank and AFD, Paris. She was on the team that drafted the Electricity Act of India ushering competition into the sector.

She has a BA (Hons.) in Economics from Lady Shri Ram College, University of Delhi and an MA and MPhil in Economics from the Delhi School of Economics. She also has an MBA in finance from University of Cincinnati, Ohio.

Vinicius Marques de Carvalho is Partner at VMCA Advogados and Professor of Commercial Law at the University of São Paulo. He holds a PhD in Commercial Law from the University of São Paulo and a PhD from the University Paris I (Pantheon-Sorbonne) in Public Comparative Law. He was a Yale Greenberg World Fellow (2016), President of the Administrative Council for Economic Defense ("CADE") (2012-2016), Vice-President of the International Competition Network (2013-2016), Secretary of Economic Law (2011-2012) and Commissioner at CADE (2008-2011).

Marcela Mattiuzzo is Partner at VMCA Advogados and PhD Candidate in Commercial Law at the University of São Paulo. She holds a Masters in Constitutional Law from the same institution and was Visiting Researcher at Yale Law School. She was Advisor and Chief of Staff at the Office of the President at the Administrative Council for Economic Defense ("CADE"), Commissioner at the Federal Fund for the Defense of Collective Rights and CADE's representative before the National Strategy for the Fight Against Corruption and Money Laundering.

Andreas Mundt has been President of the Bundeskartellamt since 2009, member of the Bureau of the OECD Competition Committee since 2010 and the Steering Group Chair of the International Competition Network since 2013.

After qualifying as a lawyer, Andreas Mundt entered the Federal Ministry of Economics in 1991. In 1993 he joined the staff of the Free Democratic Party in the

German Parliament. In 2000 he joined the Bundeskartellamt as rapporteur and later acted as Head of the International Unit and Director of General Policy.

Maureen K. Ohlhausen chairs the antitrust group at Baker Botts LLP, where she focuses on competition, privacy and regulatory issues and frequently represents clients in the tech, life sciences, energy, and retail industries. She served as Acting FTC Chairman from January 2017 to May 2018 and as a Commissioner starting in 2012. She directed all FTC competition and consumer protection work, with a particular emphasis on privacy and technology issues. Ms. Ohlhausen has published dozens of articles on antitrust, privacy, regulation, FTC litigation, and telecommunications law issues and has testified over a dozen times before Congress. She has received numerous awards, including the FTC's Robert Pitofsky Lifetime Achievement Award. Prior to serving as a Commissioner, Ms. Ohlhausen led the FTC's Internet Access Task Force and headed the FTC practice group at a leading communications law firm. Ms. Ohlhausen clerked at the U.S. Court of Appeals for the D.C. Circuit and received her J.D. with distinction from the George Mason University School of Law and her B.A. with honors from the University of Virginia.

Dr. Burton Ong, LLB (NUS); LLM (Harv); BCL/DPhil (Oxon) is an Associate Professor at the Faculty of Law, National University of Singapore ("NUS"), where he teaches and researches in the fields of competition law, intellectual property and contract law. He is an Advocate and Solicitor of the Supreme Court of Singapore, as well as an Attorney and Counsellor-at-Law in New York State. He is a member of the Ministry of Trade and Industry's Competition Appeal Board, an IP Adjudicator with the Intellectual Property Office of Singapore and sits on the dispute resolution panel of the Casino Regulatory Authority. He is a Director (Competition Law) at the EW Barker Centre for Law and Business at the National University of Singapore. He is the editor of "The Regionalisation of Competition Law and Policy Within the ASEAN Economic Community" (2018), published by Cambridge University Press.

Alejandra Palacios, Chair of Mexico's Federal Economic Competition Commission (Comisión Federal de Competencia Económica; "COFECE") is the first woman to head the Mexican antitrust authority. Following a major constitutional reform that set forth a new framework for competition in Mexico, Alejandra was appointed by Congress in 2013 to head the COFECE. She was reelected in 2017 for a second four-year tenure that will end in September 2021. Before her current role at COFECE, Alejandra worked as Project Director at the Mexican Institute of Competitiveness (the Instituto Mexicano para la Competitividad; "IMCO") for research projects focused on economic regulation, telecom, public procurement and other issues related to competition.

Since June 2016, she is Vice-President for the International Competition Network ("ICN"), the most prominent international network on competition, composed of 138 competition authorities around the world, and as of 2017, Member of the Bureau of the Competition Committee of the Organisation for Economic Cooperation and Development ("OECD"). Alejandra is also a member of the International Women's Forum, Mexico chapter. In 2019 the Women@Competition organization included her in its list of "40 in their 40s" as one of the 40 most notable women in competition in the Americas, Asia and Europe.

Alejandra holds a bachelor's degree in Economics, as well as an MBA from the Instituto Tecnológico Autónomo de México ("ITAM"). She completed a second master's degree in public policy at the Centro de Investigación y Docencia Económicas ("CIDE").

Her academic work includes teaching as well as serving as the Academic Coordinator for the ITAM Economics faculty.

Aman Singh Sethi is a Principal Associate at Shardul Amarchand Mangaldas. He has a diverse work experience, and has been closely involved on matters pertaining to anti-competitive agreements and abuse of dominance before the CCI, the National Company Law Appellate Tribunal as well as the Supreme Court of India. He has also been involved in a number of challenges seeking due process and the preservation of natural justice rights for clients against the CCI before the High Court of Delhi.

Aman has worked for several clients in the high-tech/disruptive industry, agrochemicals and agricultural traits, cement, petrochemicals, and telecommunication sectors in contentious cases. He also writes, and advises clients, on issues related to the interplay of competition law and intellectual property.

Along with co-authors Naval Satarawala Chopra and Yaman Verma, he successfully represented Matrimony.com in an abuse of dominance case against Google. Aman has also represented Uber and Indian hospitality disruptor OYO in wins against abuse of dominance claims before the CCI.

George Siolis joined the Melbourne office as a Partner when RBB Economics was established in Australia in 2009, and since then he has advised clients on

a number of contentious mergers before the ACCC as well as a variety of behavioral matters involving the alleged misuse of market power. He is a member of the Consumer and Competition Committee of the Business Law Section of the Australian Law Council and is listed in Who's Who Legal of Competition Lawyers and Economists. George has worked as a micro-economist for 20 years. Prior to joining RBB Economics George worked with Telstra and was an economic consultant based in the UK for eight years where he developed and led the communications practice at Europe Economics.

Celestine Song is an Assistant Director at the Competition and Consumer Commission of Singapore, where she leads teams working across a wide range of competition enforcement, policy formulation, outreach and advocacy work, including providing competition advice to government agencies. Prior to joining CCCS in 2014, Celestine worked on manpower and productivity policy formulation matters in the Ministry of Manpower. Celestine holds a bachelor's degree in Economics from the Nanyang Technological University of Singapore and a masters' degree in Public Policy from Peking University.

Hi-Lin Tan is the director of the policy and markets division and a member of the senior management at the Competition and Consumer Commission of Singapore, where he is involved in engaging and advising other government agencies on competition matters, and conducting market studies, investigations, and other competition law enforcement activities. Among the cases he has supervised include a market study on online travel booking, and abuse of dominance investigations into online food delivery and payment terminals.

Prior to joining CCCS in 2007, he was a teaching fellow at Boston College, a trading member of the Singapore Exchange, and an economist at the Monetary Authority of Singapore. He holds a PhD in economics from Boston College and master's and bachelor's degrees from the London School of Economics.

Sinem Ugur is a senior associate at ELIG Gürkaynak Attorneys-at-Law. She graduated from Istanbul Commerce University, Faculty of Law in 2011. She is admitted to the Istanbul Bar and has experience close to 10 years in competition law in a variety of industries. She provides legal consultancy to global and domestic clients in all areas of competition law including vertical agreements, abuse of dominance, cartel cases, concentrations, joint ventures, and compliance programs. Sinem Ugur has co-authored numerous articles relating to competition law and international trade matters in English and Turkish. She is also fluent in German. **Yaman Verma** is a Partner at Shardul Amarchand Mangaldas with over 10 years' experience practicing competition law. He is recognized as a "future leader" (Who'sWhoLegal, 2017-20); a "rising star" (Competition/Antitrust, Expert Guides, 2018-20) and included in the list of "next generation lawyers" for India (Legal 500, 2017-20).

Yaman has successfully defended WhatsApp against abuse of dominance allegations in relation to its privacy policy, Microsoft Corporation against allegations of unfair and discriminatory software licensing terms, and e-tailer Flipkart against allegations of preferential treatment and discrimination.

Yaman has recently advised on Facebook's acquisition of minority shareholding in India's fastest growing telecom company. Previously, he helped obtain unconditional approvals for Vodafone India's merger with Idea Cellular Limited, the capital alliance between Suzuki Motor Corporation and Toyota Motor Corporation, the Fiat/Peugeot merger, Walmart's acquisition of Flipkart (and successfully defended the approval in follow on litigation), and Microsoft's acquisition of Nokia's mobile telephony business. He has also advised on obtaining conditional approvals for several major global transactions, including Dow/DuPont, Agrium/PotashCorp, and Linde/Praxair.

Yaman has represented Globecast Asia in their leniency application before the Commission, and was successful in obtaining a 100 percent reduction in penalty for Globecast and its officials. He advises several trade associations in relation to compliance with competition laws.

Beth Webster is Director of the Centre for Transformative Innovation at Swinburne University of Technology. She is also Pro Vice-Chancellor for Research Impact and Policy. Her expertise centers on the economics of the way knowledge is created and diffused through the economy. She has a PhD in economics from the University of Cambridge and an M.Ec and B.Ec (hons) from Monash University. She is a fellow of the Academy of Social Sciences Australia.

Professor Webster is responsible for providing advice and leadership on policies relating to the economic and social impact of research, public industry and innovation policies. She is also responsible for measuring university research engagement and impact.

Professor Webster has authored over 100 articles on the economics of innovation and firm performance and has been published in RAND Journal of Economics, Review of Economics and Statistics, Oxford Economic Papers, Journal of Law & Economics, the Journal of International Economics and Research Policy. She has been appointed to a number of committees including the Bracks' review of the automotive industry, Lomax-Smith Base funding Review, CEDA Advisory Council, and the Advisory Council for Intellectual Property. She is a past President of the European Policy for Intellectual Property Association and is the current General Secretary of the Asia Pacific Innovation Network.

Luke Woodward heads Gilbert + Tobin's Competition and Regulation group, advising and representing clients on competition and consumer law investigations and prosecutions, ACCC acquisition and merger clearances and infrastructure regulation, including in the digital, telecommunications, gas, electricity, water, airports, sea ports and rail industries in Australia.

He has over 30 years competition and consumer law enforcement experience, both on the enforcement side with the former Trade Practices Commission ("TPC") and Australian Competition and Consumer Commission ("ACCC"), and in private practice. Prior to joining the firm in 2000, Luke held senior positions at the ACCC as General Counsel, Executive General Manager, Compliance Division (responsible for enforcement) and Senior Assistant Commissioner, responsible for mergers and asset sales.

Luke was awarded "Competition Lawyer of the Year" in Best Lawyers 2021 and is recognized as "the ultimate strategist" by a client who notes: "He knows the law, knows the ACCC inside and out and knows the best way to approach a matter from a strategic perspective; it's a real value-add." (Chambers Asia-Pacific 2020).

THE EVOLUTION OF ANTITRUST IN THE DIGITAL ERA: Essays on Competition Policy

Volume One

Editors David S. Evans Allan Fels AO Catherine Tucker

This collection of essays represents the first in a series of two volumes that set out to reflect the state of the art of antitrust thinking in digital markets in jurisdictions around the world. The issues it tackles are many: the role of innovation, the conundrum of big data, the evolution of media markets, and the question of whether existing antitrust tools are sufficient to deal with the challenges of digital markets. Each author tackles the overarching themes from their unique national perspective. The resulting tapestry reflects the challenges and opportunities presented by the modern digital era, viewed through the lens of competition enforcement.

