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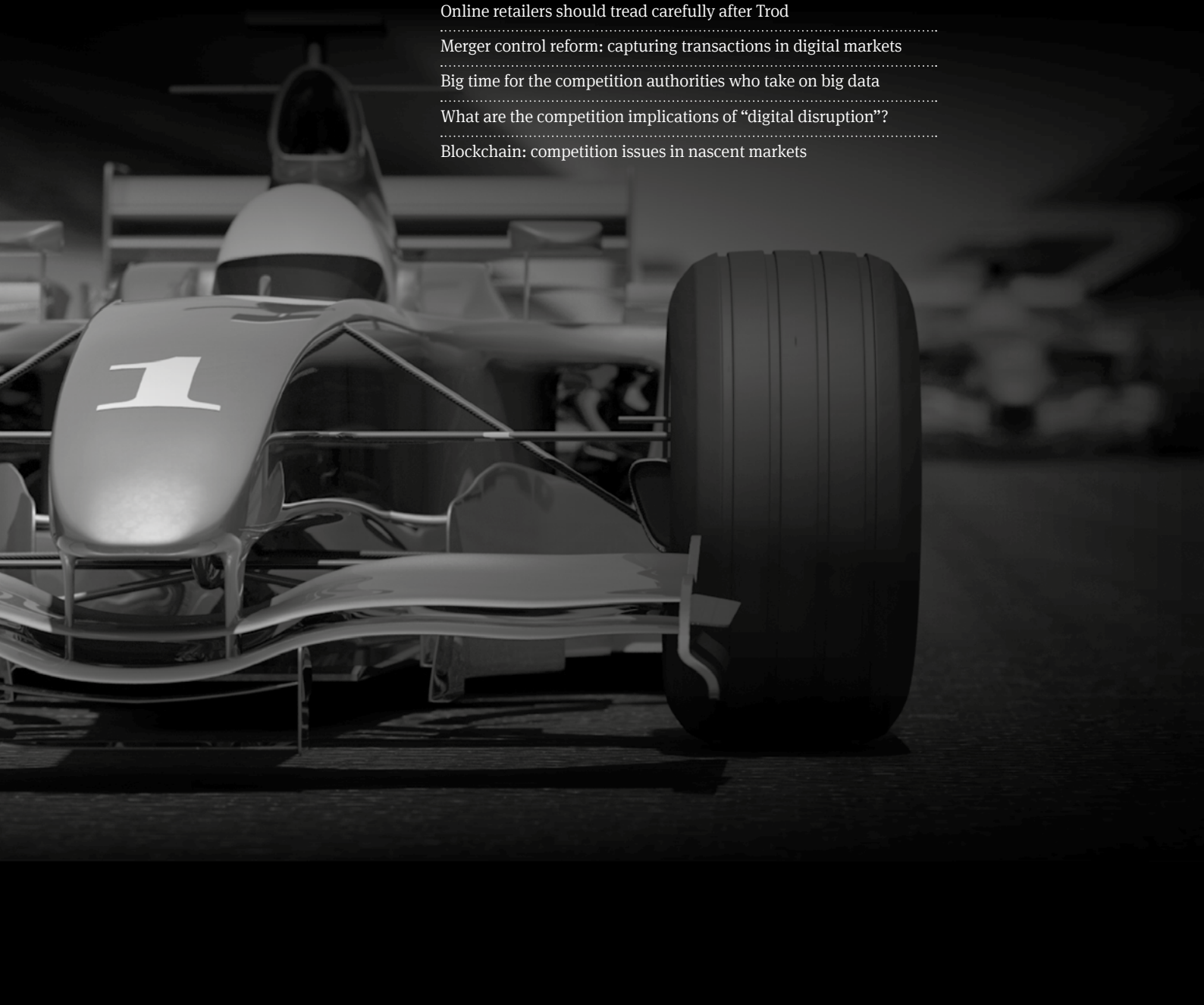
Competition world

A global survey of recent competition and antitrust law developments with practical relevance

2016



Contents

From the editor

Welcome to our third edition of *Competition world* in 2016 focusing on technology. Our teams from around the world share their insights into the role of technology in investigations, how technology is being manipulated by cartelists, how policy is evolving to keep up with technological advancements and the competition implications of digital disruption, among other hot topics.

We start in North America, examining the powers that antitrust and competition authorities have to seize data located on foreign servers. In the United States, the courts recently ruled definitively that Microsoft did not have to produce emails hosted on a server outside the US. We review the *Microsoft* opinion, consider its impact on whether antitrust authorities can obtain data located on foreign servers, and discuss the approaches of the Canadian and the European competition authorities on this issue.

Next, we examine Canada's evolving innovation agenda and its impact on competition policy, from the Competition Bureau's commitment to keeping pace with the changes wrought by new technologies and business innovations on the Canadian marketplace to the recent decisional practice of the Competition Tribunal assessing the impact of anti-competitive conduct on innovation.

As we move across to Europe, we comment first on a recent UK cartel case involving online retailers who used the tools of their trade to coordinate their activities. The companies in question relied upon a specific computer algorithm that coordinated changes in their respective prices for wall posters to implement and maintain the cartel. We comment on the speed with which the case was dispatched, the support provided by the US authorities and the increased scrutiny likely to be faced by online retailers fuelled by this case.

We then ask whether proposals in Germany to extend the scope of its national merger control regime to capture digital deals offers a helpful blueprint for Europe. The fact that deals, such as *Facebook/WhatsApp*, do not qualify for review under traditional turnover-based thresholds has driven German legislators to propose the introduction of a value-based threshold which would permit the authorities to review a deal where the parties have no or low turnover but which has the potential to impact competition. The European Commission is now consulting on similar proposals.

Turning to France, we examine the joint report by the German and French competition authorities, "Competition Law and Data", and discuss the role of big data as a source of power and transparency in markets.

Next, we look more generally at the competition issues arising as a result of emerging digital technologies and examine the competition implications of "digital disruption" and how the competition landscape is likely to evolve in future years.

Finally, we look at competition issues in nascent technology markets focusing specifically on blockchain technologies and examining four key issues: the difference between competition *in the market* and *for the market*; the adoption of technical standards; the gating effect for participating in a permissioned blockchain; and the potential scope for blockchain to be used as a method to facilitate collusive behavior.

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What powers do antitrust and competition authorities have to seize data located on foreign servers?

A recent US court ruling that Microsoft did not have to produce emails hosted on a server outside the US has raised many questions about the scope of the ruling and whether it will impact antitrust investigations. This article will review the *Microsoft* opinion, consider its impact on whether antitrust authorities can obtain data located on foreign servers, and discuss the approaches of Canada and the European Union (the "EU").

In July 2016, the Second Circuit of the US Court of Appeals held that a Department of Justice (the "DOJ") search warrant to Microsoft as an internet service provider could not force it to produce customer email data maintained on a server in Dublin, Ireland. *In the Matter of a Warrant to Search a Certain E-Mail Account Controlled and Maintained by Microsoft Corp.*, No. 14-2985, 2016 WL 3770056 (2d Cir. July 14, 2016). The dispute arose over a search warrant issued pursuant to the Stored Communications Act (the "SCA"), which authorizes search warrants for data held by electronic communications and remote computing services. In connection with a New York-based narcotics trafficking investigation targeting an unidentified individual, the DOJ sought disclosure of emails held in a cloud-based account provided by Microsoft. Microsoft refused to turn over the data, arguing that doing so constituted an "extraterritorial" application of the SCA and would violate Irish data privacy law. The government countered that the warrant was not extraterritorial because Microsoft owned and controlled the Irish servers and was able to access and produce the emails from computers in the United States. The district court agreed with the government's position, relying on precedent holding that US companies can be compelled by subpoena to produce business records stored abroad.

On appeal, the Second Circuit concluded that Congress had not intended the Stored Communication Act's warrant provisions to apply extraterritorially. The Second Circuit found the key question was not where the warrant was executed (United States) but where the data sought by the warrant was stored (Ireland). As a result, warrants authorized by the SCA are much like ordinary search warrants that can be executed only in the United States because US courts do not have the authority to authorize a search abroad.

The opinion could alter the way in which service providers store information, giving companies the ability to evade warrants for electronic data by claiming the data resides outside the United States. In a concurring opinion, Judge Gerard Lynch made it clear that the decision to limit the scope of the warrant resulted from an outdated law, and not from a choice by Congress to hamstring investigations of foreign conduct that might violate US laws. The SCA, a law adopted in 1986 as part of the Electronic Communications Privacy Act, was passed at the dawn of the Internet age, and like other 30-year old laws dealing with technology, it is hopelessly out of date. Judge Lynch emphasized that Congress should revise the statute, and such proposals have already been introduced.

The decision raised questions about how grand jury subpoenas used in US government investigations should be handled. Unlike a situation where a "subpoena could reach documents located abroad where the subpoenaed foreign defendant was compelled to turn over its own records regarding potential illegal conduct, the effects of which were felt in the United States," the Second Circuit has "never upheld the use of a subpoena to compel a recipient to produce an item under its control and located overseas when the recipient is merely a caretaker for another individual or entity and that individual, not the subpoena recipient, has a protectable privacy interest in the item." See *Marc Rich & Co., A.G. v United States*, 707 F.2d 663 (2d Cir. 1983). The Second Circuit in *Microsoft* cited *Marc Rich & Co.* as setting the standard for subpoenas, and also noted that a line of bank discovery cases have required production abroad because there is no reasonable expectation of privacy with bank records. For instance, in *US v First National City Bank*, 396 F.2d 897 (2d Cir. 1968) the Court held that a bank subject to jurisdiction of a federal court was not

absolutely entitled to withhold its bank records in Frankfurt, Germany, from a US grand jury subpoena. Beyond this, the *Microsoft* court did not address all potential avenues through which the DOJ could collect overseas data. In certain circumstances, for example, US authorities may seek information by relying on a grand jury subpoena, or through treaties and other processes established with foreign governments to handle such requests.

In Canada, the power of competition authorities to seize data located on foreign servers has not yet been considered by the courts. The Canadian Competition Act provides that a person executing a search warrant may use a computer system to search, in addition to data on the computer, any data that is "available to" the computer system. Such data could arguably include data accessible from the Canadian computer but located on a foreign server. While the courts have yet to consider whether the Competition Act search powers, in fact, extend to data on foreign servers, Canadian courts have held that search powers in other contexts have such extraterritorial reach. For example, a 2008 tax case concerning records of the online seller eBay held that information was "located in" Canada for purposes of search powers contained in the Canadian Income Tax Act if the data was readily accessible to the Canadian-resident corporation, even though the documents were on servers situated in California, USA, which were owned by the US parent. The Canadian subsidiary in that case had been authorized to access the foreign-located data for use in its business, but had not been authorized to download it to computers in Canada.

In addition to search warrants, competition authorities in Canada have another tool potentially at their disposal in relation to documents and data located on foreign servers. The Competition Act contains a provision pursuant to which the Commissioner of Competition for Canada can obtain a Court Order requiring a Canadian-resident corporation to produce the records of a non-resident affiliated company. A Canadian company can therefore be required to produce, on penalty of sanction, the records of its foreign parent or affiliate (including electronic records located on a foreign

server), notwithstanding that it may have no way to compel the cooperation of its parent company or affiliate. While this power is expansive, its constitutional and jurisdictional validity remains uncertain. On at least two occasions, legal challenges to the provision have settled before a court decision, so its validity remains untested by Canadian courts.

In the EU, the European Commission (the "Commission") can access data located on a foreign server if it is "normally accessible" from the premises of the company under inspection. In practice, the type and extent of electronic searches conducted by the Commission during an unannounced inspection or "dawn raid" will vary depending on the circumstances of the company being investigated. The Commission's usual practice is to conduct key word searches on site to find relevant information, searching across different data sources within the company's IT environment accessed on the premises. Typically the Commission will bring its own IT search capability to the company premises and will use forensic techniques to preserve the chain of custody as it transfers the company's data onto its own terminals or a separate server for review for potential relevance. Where the company's servers are located within another Member State, the Commission may seek the assistance of the National Competition Authority of that Member State in securing the data directly from the relevant server. Depending on the volume of data involved, downloading data directly from a server can have important resource implications. The Commission is much more likely to experience latency issues in downloading data from a terminal within the company's premises.

More extensive search procedures are exercised by the UK's Competition and Markets Authority (the "CMA") which can obtain a warrant to allow intrusive searching in business and domestic premises. Where an inspection is carried out under a warrant, the CMA officials have considerable powers to recover data. There is no direct provision enabling the CMA to search data located on a foreign server but, in common with the position under EU law, such data could be copied and taken away where it is "accessible". Section 28A(2)(f) of the Competition Act 1998 entitles the inspecting officers "to require any information which is stored in any electronic form and is accessible from the premises, and which the named officer considers relates to any matter relevant to the investigation, to be produced …". If there is likely to be significant disruption to business continuity as a result of the latency of the download, then the CMA may seek a voluntary agreement from the company that its mobile unit can travel to the jurisdiction in which the server is located in order to perform the data download. To date, the scope of the CMA's powers to seize data during an onsite inspection has not been challenged in the UK courts.

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Canada's Competition Bureau: riding the innovation wave

Among the many changes introduced by Canada's new Liberal government in the fall of 2015, a notable one for competition lawyers was the rebranding of the Department of Industry as the Department of Innovation, Science and Economic Development (the "ISED"). The ISED Minister was tasked with helping "Canadian businesses grow, innovate and export so that they can create good quality jobs and wealth for Canadians." Canada's Commissioner of Competition, who is responsible for the administration and enforcement of the Competition Act, reports to the ISED Minister.

The ISED Minister recently launched consultations on developing an innovation agenda for Canada. In so doing, he noted that innovation is a Canadian value, and that Canadians are a nation of innovators. From Alexander Graham Bell and the earliest telephone, to the once ubiquitous Blackberry, from medical insulin to the cardiac pacemaker, Canadians have created many innovative, revolutionary products. Even before the changes at the Department of Industry and the launch of the innovation agenda, the Commissioner of Competition has been focused on the role and effect of innovation in the marketplace. This article provides a review of recent efforts by the Commissioner to highlight the role of innovation in competition policy, including its potential impact on an analysis of anti-competitive effects and the need for competition advocacy to promote innovation and seek the repeal of overly burdensome regulations.

Innovation in Competition Policy

In 2014, the Competition Bureau held its first workshop on innovation and antitrust in Ottawa, the purpose of which was to discuss how innovation and dynamic competition inform antitrust analyses. The report from that workshop noted that innovation is "widely recognized as a key driver of economic growth and consumer welfare," and that "competitive rivalry often drives innovation." In evaluating whether business conduct is anticompetitive, the Bureau noted that traditionally antitrust enforcers have looked to price and output considerations, rather than the impact on innovation. Due to the importance of innovation for the profitability and growth of businesses, and the productivity and global competitiveness of a country's economy, it was determined that business and government should work together to foster innovation.

In its 2015-2018 Strategic Vision, the Commissioner noted that it is crucial that the Bureau keep pace with the changes wrought by new technologies and business innovations on the Canadian marketplace. The Bureau recognized that "Canadian consumers have shown interest in stronger competition and more choice through their rapid adoption of innovative products and services in both regulated and non-regulated sectors," and committed to prevent anti-competitive conduct that could impede the development of innovation. With the growth of the digital economy, the Bureau also pledged to take action against fraudulent and deceptive advertising in online and mobile markets. Due to the often international nature of these activities, the Bureau stressed its willingness to cooperate with international agencies to accomplish these objectives.

Building on its three-year Strategic Vision, the Bureau released its 2016-2017 Annual Plan in July 2016. Titled *Strengthening Competition to Drive Innovation*, the plan lays out the Bureau's priorities and objectives for the coming year. In it, the Commissioner notes that disruptive technologies are often the result of competition: "Competition foster the drive to launch products and services that are faster, better, cheaper, more convenient and fulfil the needs of companies and consumers." He also notes the unique role of the Bureau as not only the enforcer of Canada's competition law but also that of an advocate for competition, striving to ensure that regulators promote healthy competition that leads to innovation.

The Bureau identified a number of areas of focus for the current year that touch on innovation, including

- "Support[ing] innovation in the digital economy by deterring anti-competitive conduct that impedes new entrants, products and services and by stopping deceptive marketing practices in e-commerce." Recognizing that anti-competitive conduct and "overly restrictive" regulation can inhibit competition and innovation, the Bureau will seek to encourage the conditions where "competition and innovation in the digital economy can thrive"

- "Foster[ing] innovation through a pro-competitive approach to regulation." The Commissioner is empowered by the Competition Act to make representations before certain boards, tribunals and commissions, and plans to "advocate for an innovation-friendly, pro-competitive approach to regulation."

Impact on competition analyses

Another area of focus in the Annual Plan was to hold further workshops on competition and innovation. On January 19, 2016 the Competition Bureau hosted a workshop on emerging competition issues that examined disruptive business models and their impact on competition policy, and how to incorporate non-price effects in competition analysis. With regard to the latter, the workshop report noted that this issue has taken on greater importance as a result of the recent Supreme Court of Canada decision that discussed the efficiencies defence in the Competition Act.[1]

The Competition Bureau has traditionally examined non-price effects – including quality, innovation, consumer choice, diversity of business models, convenience – in merger cases, but they have traditionally been difficult to quantify. The Supreme Court's *Tervita* decision stated that a substantial lessening or prevention of competition may be proved by qualitative evidence. They added, however, where the merging parties have advanced an efficiencies defence under section 96 of the Competition Act, there will be an additional quantitative burden as the Bureau will be required to quantitatively estimate "all quantifiable anti-competitive effects" where possible. It was acknowledged by workshop participants that this may be difficult to do in practice with non-price effects.

A 2016 decision of the Competition Tribunal also looked at the impact of anti-competitive conduct on innovation.[2] In 2011, the Commissioner challenged certain rules of the Toronto Real Estate Board (the "TREB"), a trade association for real estate agents in Canada's largest city, that restricted how its member agents could provide information to consumers. This included information on historical listings and sale prices. In the Commissioner's view, these rules amounted to an abuse of dominance in that they denied agents the ability to introduce new and innovative real estate brokerage services using the internet.

The Tribunal agreed with the Commissioner, finding that the restrictions substantially prevent competition in the supply of residential real estate brokerage services in Toronto. Removing the restrictions would allow member agents to offer a broader array of innovative and higher quality services at a lower cost. In a recent speech, the Commissioner welcomed this decision and "the strong message it sends about the role of competition and innovation in the Canadian marketplace. The Tribunal noted that dynamic competition, including innovation, is the most important type of competition, and consumers are deprived of the enhanced services when TREB members are shielded from disruptive competition. The decision provides the Competition Bureau with important jurisprudence regarding the scope of section 79 of the Competition Act, and paves the way for enforcement action dealing with non-price effects and innovation."[3]

Promoting innovation through advocacy

As noted above, one of the roles that the Commissioner has focused on is to advocate for pro-competitive regulations to encourage innovation. In the 2015 fiscal year, the Competition Bureau undertook 23 advocacy-related activities, 9 of which were formal interventions using its authority under the Competition Act to appear before boards, commissions, and tribunals. The balance were written submissions, meetings, and presentations. One of the most high-profile interventions that the Competition Bureau has undertaken occurred in 2015, and the Commissioner has described it as "perhaps the most discussed and most impactful advocacy work we have done to date." Like many jurisdictions throughout the world, Canadian cities have been grappling with the impact of new ride-sharing applications such as Uber and Lyft on their taxi industries, which traditionally were subject to significant regulation. For example, between 2012 and 2015, the City of Toronto laid 208 charges against 104 Uber drivers. The City of Ottawa laid 142 charges against unlicensed drivers believed to be Uber drivers between October 2014 and August 2015. In the City of Montreal, some 200 vehicles were seized for allegedly being operated as illegal ride-sharing.

1 *Tervita Corp. v Canada (Commissioner of Competition)*, [2015] 1 SCR 161.

2 *The Commissioner of Competition v The Toronto Real Estate Board*, 2016 Comp. Trib. 7.

3 http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04090.html.

In 2015, the Competition Bureau released a white paper, Modernizing Regulation in the Canadian Taxi Industry, that called on regulators to review taxi regulations to allow ride-sharing services to compete on an even playing field.[4] This would permit consumers to benefit from what are typically lower fares, and an often improved customer service experiences. Services such as Uber allow for greater transparency with consumers being able to see the location and estimated arrival of their car. The Bureau has called on regulators to recognize that incumbents facing challenges from disruptors often react by calling on regulatory bodies to impose rules that raise barriers to entry or otherwise impede the ability of these innovators to operate. Doing so would, in the Bureau's view, "stifle competition or innovation." The white paper called for a levelling of the playing field by reconsidering whether "needlessly burdensome regulations ... such as rigid fare structures and restrictions on the number of taxis that can operate" are necessary. In this manner, all players – taxis and ride-sharing services – would need to play by the same rules.

A final example of the Bureau's innovation-related advocacy efforts is a recently-launched market study into technology-led innovation in the Canadian financial services (the "FinTech") sector. The purpose of the study is to "enable the Bureau to advise and guide financial sector regulators and other relevant authorities on how to ensure that regulation does not unnecessarily impede innovation and competition in the sector." The Bureau chose this sector in part because "the FinTech landscape is rapidly evolving as new products and services are being unveiled and the number of start-ups entering the industry grows. FinTech holds the potential to disrupt financial services, spur innovation, and generate benefits for individuals and companies across Canada."

As stated in the Market Study Notice,[5] the study will strive to answer the following questions

- What has been the impact of technology-led innovation on the competitive landscape? What is happening to competition? How will innovation impact competition in the future?
- How will consumers benefit from FinTech?
- What are the barriers to entry, expansion, or adoption for FinTech companies? Are they regulatory or structural?
- What is the current state of the regulatory framework for financial services? Does it support or inhibit competition and innovation? Are changes required to encourage greater competition and innovation in the sector?
- Are the consumer protections in place today enough to adapt for the future? What additional protections should be put in place for consumers? Is there a need for greater transparency in fees?
- What issues should be considered when developing or amending regulations to ensure competition is not unnecessarily restricted?

The Competition Bureau consulted stakeholders and undertook preliminary research over the summer of 2016. They will work to compile and analyse information through the fall of 2016 and decide whether to continue with the study or revise its scope. The expectation is that a report will be released in spring of 2017 in the event the study proceeds.

Conclusion

In his opening remarks to the 2016 workshop on emerging competition issues, the Commissioner noted that policymakers, regulators and enforcers have a duty "to nurture innovation and keep pace with changing times."[6] It is clear that the Commissioner intends to maintain a highly active advocacy program in the coming years to ensure policymakers and regulators do not impose needlessly burdensome rules, and take the opportunity to review and repeal any outdated rules. Through a combination of enforcement to prevent or deter anti-competitive conduct that may thwart innovation, market studies and other advocacy efforts, it is hoped that the Commissioner can do his part to achieve his goal of creating "an environment which nurtures competition, innovation and economic development."

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4 http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04006.html.

5 http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04087.html.

6 http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04020.html.

Online retailers should tread carefully after Trod

The announcement on July 28, 2016 by the UK Competition and Markets Authority (the "CMA") that it had fined a relatively small Birmingham-based online toy retailer, specializing in distributing Justin Bieber posters, £163,371 for breaching competition law did not trigger much reaction outside of the local media. However, if you dig a little deeper, there is more to this case than meets the eye. We discuss the implications of the Trod case for online retailers.

Shortened investigations and greater cooperation – a continuing trend

The CMA's press release confirms that its investigation into Trod Ltd was launched in December 2015, following receipt of a leniency application from one of Trod Ltd's competitors, a company called GB eye Limited (trading as "GB Posters"). To secure immunity from fines, GB eye confessed to the CMA that it had entered into an agreement with Trod whereby each agreed not to undercut the other's prices for wall posters and frames sold on Amazon's UK website and supplied evidence of the illegal agreement.

Nothing unusual so far. However, the first interesting aspect of this case is the swiftness with which the case was disposed – taking less than eight months from start to finish (the CMA issued its formal infringement decision on August 12, 2016). CMA investigations typically take well over a year, if not longer, to complete.

The CMA has come under pressure from recent Government reviews to deliver completed cases more quickly and that may partly explain the efficient handling of this case. In addition, the CMA is now using far more sophisticated forensic techniques to gather and assess evidence of wrongdoing. Unannounced inspections used to involve officials walking around company premises (shadowed by teams of lawyers) looking for hard copy files or conducting on-screen searches through company emails but, in December 2014, the CMA announced it had introduced a new role – that of the Director of Digital Forensics and Intelligence. This advanced the CMA's conduct of internet investigations, helped the capture and review of digital evidence and provided leadership to its fast-developing in-house forensics team. One year later, it was no doubt a relatively straightforward task for the CMA's digital forensic investigators to image Trod's servers and secure data which could be used to support the evidence already supplied by GB eye.

However, to fully understand why the case was concluded so quickly we need to look further afield. In April 2015, the US Department of Justice (the "DOJ") announced its first "online marketplace prosecution." David Topkins, the founder of Poster Revolution, an online poster retailer acquired by Art.com in September 2012, became the first senior manager from an e-commerce business to be prosecuted under the antitrust laws. His crime was to have conspired with other online sellers to fix, increase, maintain and stabilise the prices of certain posters sold through Amazon Marketplace in the United States over the period from September 2013 to January 2014. The DOJ found evidence of discussions between Mr. Topkins and his co-conspirators, proving that they had agreed to coordinate their pricing strategies for sales of these posters.

Having announced a plea agreement with Mr. Topkins in April 2015, the DOJ later revealed that a federal grand jury in San Francisco indicted Trod Ltd in San Francisco in August 2015, and Daniel Aston, the boss of Trod Ltd, in December 2015, for separate but similar conduct. It seems that it was the existence of the DOJ's investigation that compelled GB eye Limited to confess its wrongdoing to the CMA in the UK. Trod pled guilty for fixing prices of posters in August 2016.

This is a great case study in international cooperation – a trend that has emerged and grown in importance in the past five to ten years. The opportunity for investigators in different jurisdictions to collaborate

with each other, sharing case strategies and best practice, helps ensure more efficient use of resources and drives swifter resolution of cases. The CMA took full advantage of the US involvement, ensuring that it coordinated its ensuing investigation into Trod Ltd with the DOJ, conducting a joint dawn raid of the company premises, as well as, the domestic premises of one of the company's directors (presumed to be Mr. Aston) on December 1, 2015. The raids no doubt assisted the US investigators to progress their investigations swiftly with the DOJ announcing on August 11, 2016 that Trod Ltd had pleaded guilty to fixing the prices of wall posters sold through Amazon Marketplace to online shoppers in the US. Had these events occurred five years ago, the cooperation between the US and UK authorities would most likely have been less streamlined and the cases would have taken longer to resolve.

Technological advances raise interesting challenges for antitrust law

The second interesting aspect of this case is the novel way in which the cartel was implemented.

This was not a textbook case of executives heading to the golf course as was the case in the Lysine cartel or of collusion in a "smoke-filled room." Instead, these online retailers used the tools of their trade to coordinate their activities – relying upon a specific computer algorithm that coordinated changes in their respective prices for posters to implement and maintain the cartel. In short, once you design the right algorithm and agree how it works the computer takes care of the rest. The software itself is not new – it is commonly used by Amazon sellers to monitor competitor pricing and automatically reprice products according to price fluctuations. But the use of an algorithm to implement and maintain a cartel is not something we have seen investigated by the antitrust authorities before.

Some commentators have suggested that this novel approach to implementation of a cartel raises challenging questions about whether the law is still fit for purpose. In the United States, the legislative foundation upon which antitrust enforcement relies is more than a century old.[1] In the UK, the rules are almost 20 years old and the concepts on which the law relies are much older. Past cases have relied on evidence of monitoring and periodic communication between the cartelists to show implementation of an on-going agreement or understanding to fix prices because such on-going communication was, until now, essential to making a cartel work. Using

1 The Sherman Antitrust Act was passed in 1890 and was enhanced in 1914 by the introduction of the Clayton Act, which, among other things, allows private parties injured by violations of the antitrust laws to sue for treble damages.

technology to do this for you changes the look and feel of a cartel completely.

Despite this, in our opinion, this novel use of technology does not call into question the use of well-established principles of antitrust law. At least not yet.[2] The core concepts of what makes a cartel remain just as relevant to this type of arrangement as they do to a group of competitors meeting in a hotel room and writing down agreed prices on a piece of paper. Certainly the authorities do not appear concerned. The US federal government has not hesitated to apply antitrust rules to the online world. In the UK, the CMA has confirmed that making sure online and digital markets are working effectively is a particular priority. Indeed, this is the third case targeted at online retailers that the CMA has conducted this year, with the previous cases featuring suppliers who had restricted the prices at which retailers can sell their products online. While representatives from Trod suggested they had no idea that what they did was a breach of competition law, this appears to have stemmed from a general lack of awareness as opposed to a perception that the law did not cover the conduct in question. A costly error given the company is now in administration.

More of an issue may be the challenges posed in gathering the requisite evidence in these types of cases in the future. In this case, it is likely that the CMA – as with the DOJ before them – took care to ensure they had witness evidence from GB eye to corroborate the contemporaneous evidence available. This is partly because the CMA does not want to repeat the mistakes of its predecessor – the Office of Fair Trading – which had a poor track record, losing a number of high-profile cases before the Competition Appeal Tribunal for failing to ensure its decisions were robust.

However, in the Trod case, absent evidence from GB eye of a "concurrence of wills" a creative defence team might have argued that once the algorithm was in place the robots had taken over, using self-learning and adaptation to determine the market price. Interestingly, a CMA spokesperson revealed that it was not possible in Trod to determine how much the firms had benefitted from the cartel, although prices had typically increased by 20 per cent during the period from March 2011 to July 2015. The lack of precision perhaps suggests that monitoring prices was not something the companies themselves were concerned about once the algorithm was in place – perhaps they didn't need to because the computers couldn't "cheat" on the cartel. In the future, though, it may be that the CMA needs to get up-to-speed with analysis of "big data" to be able to demonstrate the continuing implementation of a cartel through price movements.

What does this mean for online retailers?

Given the prevalence of automatic repricing software and its use by online retailers, analysing algorithms to ensure that consumers enjoy the benefits that technology delivers without being exposed to deceptive and unfair practices is likely to become part of the day job for antitrust officials.

This is a task they will be increasingly well-equipped to perform. Only last year, the US Federal Trade Commission announced that it had created the Office of Technology, Research and Investigation which will undertake a range of projects, among them to examine the effect of algorithms on markets. There will be many within the CMA who will no doubt be interested in the results of this research.

While we can't predict the path of technology, and it is clear that future challenges still lie ahead for antitrust authorities, they have so far shown themselves equally capable of evolution: increasing the number, speed and effectiveness of the cartel investigations they pursue and working together to better understand technology and how antitrust law can be used to combat exploitation. Online retailers should tread carefully when conducting business using automatic repricing software to avoid ending up like Trod.

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2 One can imagine some future challenges posed by artificial intelligence to the extent that systems tasked with achieving the best possible profit for a business arrive at a view that interacting with competitor systems to raise prices may be the best way to do that, independent of any agreement between the businesses or instruction by programmers to do so.

Merger control reform: capturing transactions in digital markets

On July 1, 2016, the German Ministry of Economic Affairs published a draft bill to amend the German Act against Restraints of Competition (the "ARC"). It proposes, among other things, to extend the scope of the existing merger control regime by introducing a second jurisdictional threshold based on the value of the transaction. Absent major changes to the bill by Parliament (which appear unlikely), the new value-based test will enter into force by the end of 2016. The effect of the new test will be to catch any merger with a transaction value of more than €350 million, irrespective of the turnover generated by the target company in Germany.

Background, purpose and aims of the new value threshold

Turnover-based thresholds are a common feature of merger control regimes worldwide offering a simple tool enabling parties and authorities to identify proposed transactions which merit assessment as to their possible effects on competition. While the level of turnover required to trigger a need to notify may vary considerably between jurisdictions, turnover tests are otherwise largely similar, requiring a measurement of the turnover of one or both of the parties in a particular jurisdiction or region.

In recent years, a number of high profile cases in digital markets have escaped review because the parties have not met the relevant turnover thresholds. This is largely because the parties provide their services free of charge. While a free-of-charge service obviously results in respectively low revenues, it does not necessarily indicate an equally low economic value or suggest that the transaction will have a negligible impact on competition. Small "digital start-ups" will often fail to generate high turnover in the early stages but their corporate value may nonetheless be significant as a result of the degree of innovation, know-how, or their market presence in terms of users and/or members. This conflict between high purchase prices and low turnover is considered particularly important in terms of the overlap between Data Protection and Antitrust Law. *Big Data* has already become a "core economic asset", so not only is the digital sector subject to data protection laws but also transactions between parties which own such assets ought to be subject to scrutiny by competition authorities.

This "gap" in competition authorities' powers to scrutinise the impact of so-called "digital" deals has caused frustration leading to increased demand to find a means to better assess commercial activity within the digital sector. One such deal was the *Facebook/WhatsApp* transaction, which was ultimately reviewed by the European Commission (COMP/M. 7217 of 03.10.2014) because of the "one stop shop" rule which allows parties to go straight to the Commission if their transaction qualifies for review under the national competition laws of three Member States (certain of which have market share or share of supply tests in addition to turnover-based thresholds) – but did not qualify for review in other major EU jurisdictions which exclusively utilise turnover-based thresholds.

The new German merger control regime

The new value based threshold proposed by the German Ministry of Economic Affairs has been modelled on the merger control regime in the USA. Under the proposal, section 35 ARC will be supplemented by a new paragraph 1a which provides (as an alternative to the second domestic turnover threshold) a new notification threshold of €350 million, based on the "value" of the transaction. The value is effectively the price that the seller receives from the purchaser as a result of the transaction. However, it is worth noting that, pursuant to a new section 38(4)(a) ARC, this concept will be interpreted broadly to include multiple types of assets (i.e. contingent considerations or assumed liabilities). The proposal includes a provision, under section 43(a) ARC, for the

value threshold to be reviewed and, if necessary, adjusted after three years.

In addition, under section 35(2) ARC, it is proposed to dis-apply the *de minimis* exemption for transactions that meet the value threshold. The *de minimis* exemption was introduced to allow for small family owned businesses to be acquired without being subject to compulsory assessment. It applies in case of an acquisition of a target company which is not affiliated to any group of undertakings and whose turnover was less than €10 million in the preceding business year.

In summary, the new provisions require that transactions must be notified to the German Federal Cartel Office (the "FCO") if

- The combined consolidated worldwide turnover of all undertakings involved exceeded €500 million in the preceding business year *and*
- The German turnover of at least one undertaking involved exceeded €25 million in the preceding business year *and*
- The German turnover of at least one other undertaking involved exceeded €5 million in the preceding business year

or

- The value of the consideration, received as a result of the transaction, exceeds €350 million *and*
- At least one other undertaking (besides the undertaking generating €25 million in Germany in its preceding business year) either operates, or is likely to operate in the German market.

Although the new regime is expected to come into effect by the end of the year, its passage has not been entirely smooth. On July 25, 2016, the FCO published its comments on the draft amendments to the ARC and criticised the draft proposal in so far as it concerned the domestic effect of transactions (point 5 above). The FCO encouraged the legislator to include an explicit provision to capture domestic activities carried out by the target undertaking. Absent this, the FCO suggested that the merger control regime might inadvertently capture cases which were not intended to be subject to the new regime, such as international joint ventures (where the joint venture is not currently active within Germany). The FCO's comments appear to be driven by concerns to ensure that the regime does not become burdened by forcing the review of multiple additional transactions where the main focus of the transaction lies outside of Germany. In addition, the FCO considered that the broad approach to defining "value" may be too uncertain, leading to disruption to the notification process as a result of parties needing to request clarification on whether their transactions are caught.

A blueprint for Europe?

A transaction-value based threshold appears to be on the horizon in the EU as well. The European Commission has confirmed that it plans to reconsider the EU turnover based thresholds in light of the Facebook/WhatsApp transaction by issuing a public consultation.[1] This followed comments on August 3, 2016, in which the Commission published an "Evaluation Roadmap"[2] in which it stated that a "purely turnover-based jurisdictional threshold" is perceived to give rise to a "legal gap [that] may not only concern the digital industry, but also other industry sectors, such as pharmaceutical." Competition Commissioner Vestager has indicated her support for a regime change noting "the value of a merger could be a good guide to its importance".[3] However, she also emphasised the need for there to be a well-defined EEA link and for the value threshold to be set at an appropriate level. The consultation asks for views on whether there is a possible enforcement gap under EU merger control noting "A debate has recently emerged on the effectiveness of these purely turnover-based jurisdictional thresholds, specifically on whether they allow to capture all transactions which can potentially have an impact in the internal market." The German transaction based threshold may well serve as a blueprint for future transaction-value based thresholds in the EU.

1 http://ec.europa.eu/competition/consultations/2016_merger_control/index_en.html.
2 http://ec.europa.eu/smart-regulation/roadmaps/docs/2017_comp_003_evaluation.pdf.
3 https://ec.europa.eu/commission/2014-2019/vestager/announcements/refining-eu-merger-control-system_en.

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Big time for the competition authorities who take on big data

On May 10, 2016, the German and French competition authorities published a joint report on "Competition Law and Data", making it a prime example of close cooperation between two major national authorities, in a field of growing interest at the dawn of the digital age.

The increase in the collection, processing and use of data by companies has given rise to a broad debate about the impact of data on corporate strategies and competition. Discussions mostly focus on the so-called "big data", large amounts of different types of data produced at high speed from multiple sources, handled and analyzed by powerful processors and algorithms. Big data enabled the emergence of companies achieving high turnovers thanks to data-based business models. Google and Facebook are the most obvious examples. It also raises many concerns such as the risk for innovators of tomorrow being prevented from entering a market by companies seeking to protect their already built-up data advantage.

Yet, the big data issue is a difficult one to tackle from a competition standpoint since enforcers can only use their powers in the context of merger control or to sanction abuses. This is reflected by the numerous and various actions recently taken by the authorities. For example, the European Commission used merger control to analyze big data in 2008, when Google acquired DoubleClick an online advertising server, and later in 2014 when Facebook acquired WhatsApp. The Competition and Market Authority (UK) published a study on the commercial use of consumer data published in 2015. The Bundeskartellamt initiated proceedings against Facebook on suspicion of having abused its market power by infringing data protection rules in March 2016 (Germany).

In this context, the French and German joint report (the "Report") is a very welcomed initiative aiming to offer an overview of competition issues arising from the use of data as well as the existing case law and debates. It sets a framework for analysis before taking enforcement action and enhances the importance of adopting a case-by-case approach.

The Report identifies three main aspects when assessing the use of data, and even more so when one looks at "big data", under competition perspective: (i) data as a source of market power, (ii) data as a source of market transparency, and (iii) data-related anticompetitive conduct.

Data as a source of market power

On certain markets where the access to data is a competitive advantage, the collection and use of data may raise barriers to entry allowing established operators to increase their prices, in particular given certain market types and characteristics. For instance, in data-related markets with strong scale and network effects or multi-sided markets, access to a large amount of data allows better services, which attracts more customers and in return brings more data. In such markets, the holding of data by few established businesses is even more likely to restrict competition against competitors and entrants given the snowball effect.

The data advantage analysis or whether data creates market power are key issues that can only be assessed on a case-by-case basis. However, the report identifies two elements of relevance: (i) whether the data under consideration can easily be obtained by rivals and (ii) whether the scale and scope of data matter.

Data as a source of market transparency

As raised in the Report, the collection of data is likely to impact the market structures by bringing market transparency. Greater market transparency on the consumers' side enhances better competition both in terms of price and quality by enabling consumers to compare prices and conditions in real time (for instance by the use of price comparators and platforms such as TripAdvisor or market places, such as Amazon or eBay). Transparency can also help potential competitors to entry markets by providing them relevant information on consumer needs and market conditions.

Market transparency may also have anticompetitive effects. The availability of price and conditions information may be wrongly used by businesses in order to monitor and maintain tacit or explicit collusion, or to facilitate collusion in the hypothesis competitors fix prices through similar algorithms.

Data-related anticompetitive conducts

M&A transactions in data-driven industries may facilitate anticompetitive behavior. The acquisition of large datasets might increase the concentration of data in the hand of few businesses. The combination of different datasets, as well as the merger of businesses holding strong positions in both upstream and downstream markets might lead to market foreclosure. Indeed, anticompetitive effects might be particularly strong when it is impossible for competitors to obtain an equivalent datasets by any other means.

Further, businesses holding a significant data advantage might engage into exclusionary data-related conducts preventing actual or potential competitors from running their businesses or accessing a market. The Report cites as examples, discriminatory access to data, exclusive contracts, tied sales and cross-usage of datasets or the use of data as a vehicle for price discrimination.

Finally, the Report discusses the personal data issue that privacy policies might indicate exploitative conduct especially when implemented by a dominant undertaking and if there is a strong interplay between the market position and the data collection.

What's next?

Originally seen as a data protection enforcement issue, the collection, processing and commercial use of data may also raise competition issues, a parameter that competition authorities are not ready to set aside. While the German authority has already opened an abuse of dominance investigation into Facebook, the French Competition Authority (the "FCA") prefers to opt for full sector inquiries in order to gain expertise. Hence, last May, the FCA started at its own initiative to gather information in order to assess data processing in the online advertising sector.

There is no doubt that a business' conduct towards data, especially dominant businesses in data-related sectors, will be an area of intense scrutiny in the coming years. Authorities will closely monitor the data advantage and businesses amassing large amounts of data might draw antitrust investigations, but actually any industry sector could see its "data" conduct under scrutiny in the near future.

Yet, enforcers face major obstacles since they lack adequate tools to tackle "big data" issues under competition law. So far, their only means of enforcement is through either proceedings or merger control. Data-sourced market power cannot be addressed without any infringement. Regarding mergers, experience shows that big player start-ups are often not subject to merger control due to low turnovers. It is in this context that the German federal government is considering introducing a transaction value notification requirement. That could be the first of many more new rules to come across Europe.

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What are the competition implications of "digital disruption"?

Digital disruption is blowing a Schumpeterian gale of creative destruction throughout the global economy. These winds of change are delivering substantial increases in consumer welfare. The glowing glass screen of a smartphone enables us to access the library of all human knowledge. We can order any imaginable good or service; literally at our fingertips.

Yet, competition challenges are arising. Firms bearing the brunt of digital disruption are seeking regulatory protection. Those firms riding the winds of change are achieving significant market power. Global debate is occurring regarding the extent to which regulatory intervention is appropriate.

So what are the competition implications of "digital disruption"? Why are competition issues arising and what can we expect in the coming years? This article provides a summary of the types of competition issues arising and some useful background and context.

A high technology ecosystem in the form of a digital platform

High technology industries have pushed the frontiers of competition law for many decades, including aerospace, robotics, electronics, biotechnology, pharmaceuticals and computer science. The competition issues with such industries are well known, associated with high innovation, high sunk costs in research and development (R&D), and high intellectual property (IP) intensity. In many high technology industries, competition has been for the market in the form of an IP right that has conferred temporary market power.

However, much of the current digital disruption is occurring at a comparatively low cost without substantial R&D expenditure. Was Marcus Persson, for example, really participating in a "high technology" industry when he developed and sold the game of *Minecraft* for US$2 billion, particularly as he reputedly coded the software in his bedroom?

The answer to the *Minecraft* question is that the current wave of digital disruption involves a confluence of enabling "high technologies" that have been co-ordinated in such a way that they have facilitated low cost commercial exploitation via simplified application software.

In this manner, while the building blocks of digital disruption have involved many billions of dollars of historic R&D, a software developer can now stand on the shoulders of the R&D giants to develop and launch a particular software application. A developer can also use enabling "building block" software applications. Such applications have opened the ability to create software to non-experts. The author's eight year old daughter, for example, recently developed her own iPhone game at a holiday "code camp" using enabling software.

The concept of "digital disruption" in the 21st century can therefore be viewed as a high technology ecosystem. This ecosystem has involved high technology industries facilitating low cost innovation by creating a digital platform for consumer-friendly, mass-market software. This high technology ecosystem involves a combination of:

- Ubiquitous digitalisation of information and content into binary data, using complex coding algorithms
- Affordable pocket supercomputers, in the form of smartphones, that are now available at low cost (even in developing markets) to provide high levels of data processing power
- Broadband Internet communications, enabling high speed transmission of large volumes of digital data between all manner of devices anywhere on the planet
- Sophisticated proprietary "operating system" software that enables the functionality of sophisticated devices to be readily accessed by simplified application software;

- User-friendly application software (known colloquially as "apps") often now delivered at a very low or no cost to consumers in the form of a "digital platform", such as Internet search, email, video calling, data storage and product ordering

- The use of the "digital platform" to intermediate and co-ordinate the delivery of content, services, advertising, physical product and logistics using a diverse range of business models, typically facilitated by Internet-access.

The resulting Schumpeterian gale of innovation is now sweeping sector-by-sector, industry-by-industry, market-by-market, across the globe.

The global disruptive impact of digital platforms

The ecosystem identified above is underpinned by intellectual property, in the form of computer code (i.e. software), rather than physical goods. The centrality of software to digital platforms has a range of important implications, derived from the cost characteristics, replicability and flexibility of software itself.

In August 2011, Silicon Valley venture capitalist and successful internet entrepreneur Marc Andreessen wrote an article for the Wall Street Journal that provided insights into the future impact of software in the context of digital disruption and digital platforms, titled "Why Software Is Eating the World".[1]

Andreessen's four key insights were as follows.

Access to global market

The digital platform required to transform industries through software now works and can be delivered at global scale at an affordable cost. Software is the key that unlocks an addressable global market comprising many billions of smartphone users across the world. Andreessen commented:

"Six decades into the computer revolution, four decades since the invention of the microprocessor, and two decades into the rise of the modern Internet, all of the technology required to transform industries through software finally works and can be widely delivered at global scale. Over two billion people now use the broadband Internet, up from perhaps 50 million a decade ago... With lower start-up costs and a vastly expanded market for online services, the result is a global economy that for the first time will be fully digitally wired—the dream of every cyber-visionary of the early 1990s, finally delivered, a full generation later."[2]

Low overheads

Software has traditionally been expensive to create (involving high sunk costs), but inexpensive to replicate (involving a marginal cost near zero). However, once software is deployed, it may create a business without the physical overhead of existing firms, often co-ordinating existing physical resources and distribution systems. Programming tools and internet-based (cloud) services enable the launch of software-powered start-ups without the need to invest in substantial physical infrastructure or employees.

Adaptive flexibility

Software is highly flexible and can be changed rapidly, enabling constant and continuing innovation and adaptation, creating dynamically changing business models. Digital disruption is therefore leading to an intensification of business model experimentation and an intensification of competition.

Disruptive potential

In industries with a heavy real-world component such as oil and gas, the software revolution is primarily an opportunity for incumbents. But in many industries, new software ideas are enabling software-based start-ups to enter existing industries leading to an intensification of competition. Andreesson commented:

"My own theory is that we are in the middle of a dramatic and broad technological and economic shift in which software companies are poised to take over large swathes of the economy. More and more major businesses and industries are being run on software and delivered as online services—from movies to agriculture to national defence."

"Many of the winners are Silicon Valley-style entrepreneurial technology companies that are invading and overturning established industry structures. Over the next ten years, I expect many more industries to be disrupted by software, with new world-beating Silicon Valley companies doing the disruption in more cases than not."[3]

Based on forecasts from Silicon Valley, software-driven digital disruption is likely to next hit the finance, energy, healthcare and logistics sectors. Meanwhile, the Schumpetarian gale is already raging in retailing, telecoms, media and transport, involving such

1 M Andreesson "Why Software Is Eating The World", The Wall Street Journal, 20 August 2011.

2 *Ibid.*

3 *Ibid.*

software-driven brands as Amazon, Skype (Microsoft), WhatsApp (Facebook), Netflix and Uber.

Big data and the information revolution

In conjunction with the rise of software-based companies, digital disruption is also being powered by the information revolution – known colloquially as "big data".

The term "big data" has existed for many decades and, likewise, data analytic capabilities have existed for many decades. What has dramatically changed over the last few years is the velocity, variety and volume of data. Some 90 per cent of the world's data has been created in the last few years. As Neelie Kroes, previous European Commissioner for the Digital Agenda and Vice-President of the European Commission, noted in a key speech in March 2014:[4]

"Now we stand facing a new industrial revolution: a digital one. With cloud computing its new engine, big data its new fuel. Transporting the amazing innovations of the internet, and the internet of things. Running on broadband rails: fast, reliable, pervasive... Take all the information of humanity from the dawn of civilisation until 2003 – nowadays that is produced in just two days."

Data storage costs have also dropped to the extent that data storage is no longer a significant cost concern for many businesses. Meanwhile, computer processing capability has increased such that it is possible to process "big data" in order to extract high quality competitive information. Neelie Croes used the following metaphor in her speech:[5]

"That is the magic to find value amid the mass of data. The right infrastructure, the right networks, the right computing capacity and, last but not least, the right analysis methods and algorithms help us break through the mountains of rock to find the gold within."

Software-driven digital platforms often involve business models that utilise data processing capability to deliver goods and services that are more tailored to the personal needs

4 N Croes "The data gold rush", Speech by the European Commissioner for the Digital Agenda and Vice-President of the European Commission, Europe Data Forum, Athens, March 19, 2014.

5 Ibid.

of particular consumers. In the 21st century, customer information is a strategic business asset and valuable commodity that may give a digital platform a competitive edge over its rivals.

Bearing the analysis in mind, the question arises whether unique competition issues arise in the context of digital disruption that may not otherwise arise in other high technology industries. This question is answered by the table on the next page – drawing insights from the economics of information industries.

As can be seen from the table, digital disruption has many unique characteristics giving rise to competition implications. While Microsoft famously argued that the rapid rate of disruptive innovation is sufficient to prevent anti-competitive harm (because market power is only transitory),[6] it is also clear that the potential extent of imperfect competition in Internet-based markets will give rise to regulatory pressures and competition issues for many decades to come.

6 *United States v Microsoft (Microsoft III)*, 253 F.3d 34 (D.C.Cir. 2001).

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Characteristics of digital disruption		Competition implication
Unsettling of social norms	Innovative business models may be subject to complaints based on the unsettling of social norms, raising wider societal questions. Many societal issues arising from digital platforms have not yet been fully resolved by policy-makers. For example, to what extent should personal information gathered by smartphones remain private? Should personalised Internet newsfeeds be sacrosanct from commercial or political adjustment and manipulation?	Alex Chisholm, Chief Executive of the United Kingdom (UK)'s Competition and Markets Authority, commented in a speech in December 2014 as follows:[7] "Until our societal and political processes have digested these questions more fully, competition authorities will have to play a more modest role on these wider questions – shining a light on competition trade-offs and consequences for the quality of the consumer experience".
Regulatory barriers to entry	Extant regulation may create barriers to entry or favour a legacy business model. Taxi licensing sits uneasily with Uber's "ride sharing" model. Smartphone-based payment systems face a maze of financial market regulation.	Competition policy favours regulation that does not discriminate in favour of particular business models or incumbent technologies. Where regulation impedes legitimate market entry, competition policy promotes deregulation and regulatory reform.
Rent-seeking incumbents	Market entry by disruptive businesses places intense pressure on existing businesses. Rent-seeking and competition complaints are a common response. However, such complaints may also be legitimate.	Regulators must determine whether the market entry is a manifestation of competition or involves anti-competitive conduct or potentially both. The investigation of Google by the European Commission, for example, raises such challenges.
Bundling, tying and leveraging	The market entrant may use an entry strategy that utilises existing markets in which it has high market power – effectively leveraging its market power across different markets.	The so-called Internet "browser wars" between Netscape and Microsoft over the period 1997-2002 are illustrative of a bundling strategy in which a market entrant could leverage its market power between different markets.

7 A Chisholm "Giants of digital: Separating the signal from the noise and the sound from the fury" Speech by CMA Chief Executive, CRA Competition Conference, Brussels, December 10, 2014.

Characteristics of digital disruption		Competition implication
Amplifying of market power	Proprietary software can be used to deny access to a device or other software functionality, creating strategic bottlenecks.[8] Apple's iStore, for example, has become a key gateway in the utilisation of the iPhone.	Virtual bottlenecks raise the same issues of potential discrimination and excessive pricing as physical bottlenecks. Control of resource bottlenecks can be used to raise rivals' costs or deny functionality.
Multi-sided markets	Disruptive business models often involve matching of buyers (as a service provided to buyers) with sellers (as a service provided to sellers), creating "two-sided markets".[9] In multi-sided markets, the more price-sensitive service may be cross-subsidised by the less price sensitive service, potentially increasing barriers to entry.	Multi-sided markets may accentuate network effects and facilitate leveraging of market power. Complications may arise, for example, where one service is fully cross-subsidised by another service so is effectively free. Google's free Internet search product, for example, is cross-subsidised by AdWords advertising revenue.
Disinter-mediation	Internet-based business models have altered the ability of businesses to bundle and unbundle through the value chain, creating significant changes in product offerings and distribution models. Accordingly, business model competition is increasing.	Businesses that historically offered a bundled offering (e.g. pay TV over home cable), are now facing competition from unbundled offerings (e.g., pay TV over any Internet device), and vice versa. Questions of access, exclusivity, foreclosure and bundling may arise.
Network effects and "winner takes most" tipping	In information-based industries, network effects are common. The more users of a service, the greater the benefit gained by other users, creating demand-side economies of scale. Markets that are subject to network effects may be subject to "tipping". A firm with an early advantage may be selected disproportionately by new customers, creating a "winner takes all" (or "winner takes most") consequence that tips towards a monopoly.	When faced with network effects, a market entrant would need an innovation of sufficient magnitude to dislodge the industry leader. An example is the rapid substitution of SMS phone messaging by WhatsApp in some markets. Social media and communications software are particularly susceptible to network effects, including Facebook, LinkedIn, Twitter, WhatsApp and Skype. Network effects are amplified by compelling "walled" exclusive content.
Globalisation of markets	Internet-based e-commerce is often blind to national borders, enabling a firm in Country A to supply over the internet to a consumer in Country B. As a consequence, markets are becoming more globalised and competitive.[10]	Services are being reconstituted around market segments that have a need for a differentiated product. However, many of those market segments are orders of magnitude larger than they used to be, involving supply into global markets.
Platform-based competition	The owner or operator of the platform may own or create only one piece of the ecosystem. Many complementary products may be added to the ecosystem for the digital platform to be popular with consumers.	Digital platform owners and operators may seek to secure access to exclusive content and features (including IP), thereby preventing the establishment of competing platforms IP rights may be fiercely defended.

8 T Wu "In the Grip of the New Monopolists – Do away with Google? Break up Facebook? We can't imagine life without them—and that's the problem" *The Wall Street Journal*, November 13, 2010.

9 HA Shelanski "Information, Innovation and Competition Policy for the Internet" (2013)1 61 *University of Pennsylvania Law Review* 1663.

10 United States Antitrust Modernisation Commission, "Report and Recommendations", April 2007.

Characteristics of digital disruption		Competition implication
High switching costs	Platforms often include disincentives to customer churn, including restrictions on porting digital content. Free cloud storage may act as a "lock in" to a particular digital platform.	Switching costs for consumers may be high, including forfeiture of existing valuable content. For example, an iPhone is effectively bundled with iTunes-purchased digital content.
Path dependency and first mover advantages	High-tech markets are often highly "path dependent"— market winners can be determined by the order in which companies act. A first mover can benefit from "tipping" and "winner takes most" network effects.[11]	A company, or a small number of companies, can rapidly obtain and sustain a significant market share that can be hard to reverse Given tipping effects, there may be substantial "first mover" advantages.
Standardised products and inter-operability	A standard itself may exhibit path-dependency and tipping effects, such as the QWERTY keyboard. Complications arise where a technology is protected by intellectual property rights.	Where inter-operability issues arise, the owner of the favoured standard may possess substantial market power, as demonstrated by historic litigation over access to software source code.
Realisation of synergies	Combining complementary assets enhances innovation capabilities and thus spurs innovation. Complex devices such as an iPhone, for example, incorporate multiple physical components, substantial intellectual property, and sophisticated software.	Pro-competitive mergers and business practices allow for the more efficient combination of complementary assets. In the context of digital disruption, a merger could facilitate the realisation of a highly innovative product.

11 SJ Liebowitz & SE Margolis "Path Dependence, Lock-in, and History" (1995) 11(1) *Journal of Law, Economics and Organisation* 205-26.

Blockchain: competition issues in nascent markets

Blockchain technologies are receiving a great deal of attention from businesses across a broad range of industry sectors, and for very good reasons. By offering the possibility of dealing with third parties using a secure, shared, indelible decentralised ledger, blockchain technologies[1] have the potential to deliver significant value in transactions. These features of blockchain, rather than the precise technologies that that term includes, are of central importance. They raise the possibility of streamlining multi-party processes (whether between members of a corporate group or between institutions) in a secure way which maintains the trust of the various participants. Financial institutions and "Fintech" companies have been among the first to explore the potential for commercialising blockchain, both individually and through consortia such as R3[2] and PTDL.[3]

We refer you to Norton Rose Fulbright's global legal and regulatory guide for a detailed introduction to what blockchain technologies are, how they may affect various industries, and an overview of the legal issues that they will raise.[4] The purposes of this article, an abridged version of a later chapter in that guide, is to look at the possible competition law issues that blockchain raises. At this stage, those issues are familiar issues at the crossroads of technological innovation and competition rules. Nonetheless, the development of blockchain – in particular by consortia and other groups – requires the businesses involved to carefully consider competition compliance. Here, we look at four areas that raise competition issues

- The difference between competition *in the market* and competition *for the market*, and the extent to which a single winner" in commercialising blockchain in a particular sector might be constrained by competition law
- The adoption of technical standard
- The gating effect for participating in a permissioned blockchain
- The potential scope for blockchain to be used as a method to facilitate collusion, or exchange sensitive information.

We conclude by looking briefly at how well-positioned the relevant competition authorities will be for dealing with issues as and when they arise.

In the market and for the market

In theory, competition will deliver good outcomes for consumers where there are multiple firms in a market, each competing to offer the highest quality and most innovative products at the lowest price. In some cases, given the nature of the product, the competition is for the entire market. Where companies act as necessary intermediaries, for example Facebook, Uber or Airbnb, their value lies in the fact that they might have achieved the position of that single necessary intermediary.

At present, blockchain vendors might be split into two camps: those seeking to provide specific functionality in particular industries and those who seek to provide general purpose infrastructure. In some regards, blockchain can be seen as a tool of disintermediation, reducing the need for middlemen. However, to the extent that any one firm becomes the necessary or sole provider of any relevant technology or service, that firm will to some extent find itself constrained by competition rules on dominance (including Article 102 TFEU in the EU and the equivalent Chapter 2 Prohibition in the UK Competition Act and also potentially – to varying extents – under competition law in other jurisdictions around the world). For example, a firm that is "dominant"

1 We will use the shorthand "blockchain" in this article a cover the range of developing technologies.
2 https://r3cev.com/about/.
3 http://www.ptdlgroup.org/about-us.html.
4 "Unlocking the blockchain A global legal and regulatory guide Chapter 1: An introduction to blockchain technologies" is the first chapter of that guide and is available at http://www.nortonrosefulbright.com/knowledge/publications/141573/unlocking-the-blockchain-a-global-legal-and-regulatory-guide-ch1.

in providing blockchain for a particular use might be prohibited from pricing or offering other terms that would have the effect of excluding smaller or potential competitors from challenging its position.

Competition rules do not prevent companies becoming dominant through successful organic growth: that is the prize that awaits the winner of the process of competition in a market. However, as technologies develop, and providers look to combine with rivals or providers of complementary goods or services, merger control rules can apply to prohibit business combinations that would create anticompetitive market structures.

Technical standards

The European Commission (the "EC") recognises that common standards, agreed to and applied by participants in a market, will generally be pro-competitive, as they allow for promote "economic interpenetration"[5], including interoperability and ensuring compatibility of services which supports market efficiency and so should lower costs and facilitate increased commerce. Industry agreements on technical standards are likely to be important in the development and commercialisation of blockchain, in particular in the financial sector where the use of distributed ledgers is expected to significantly reduce transaction costs and also enhance transaction security. What is less clear is how many sets of technical standards may be agreed. Will there be universal standards that apply in all (or most) cases? Will there be competition between different standards for ascendancy? And will there be disparate sets of standards for different operations in different industries?

In any case, where rivals come together to set standards, discussions and any ensuing agreements will be subject to competition law. The key concerns the authorities may have in considering such coordination (whether on receipt of any complaint or in a review on its own initiative) will relate to the way standards could discriminate against or exclude providers or otherwise inhibit free competition between competing technologies.

The terms of standardisation agreements require careful review under applicable competition law. Generally speaking, standard setting agreements will not be seen to restrict competition where participation in the setting of standards is unrestricted and the procedure for adopting the standard in question is transparent, with no obligation to comply with the standard in commercialising the underlying technology, and which provide access to the standard on fair, reasonable and non-discriminatory terms (including in respect of any underlying intellectual property rights contributed to the standard by participants).[6] In cases where a standard setting agreement could restrict competition, it will be possible to argue that the agreement brings about efficiencies, which could not otherwise be achieved, and which are passed on to customers, with the Commission recognising that: standards creating compatibility on a horizontal level between different technology platforms are considered to be likely to give rise to efficiency gains.[7]

Gating

A similar competition law concern to that of access to standards arises in the commercialisation of blockchain in relation to access to permissioned blockchain systems. Where a blockchain system is permission based, its participants (and its gatekeeper) should consider whether refusing access to third parties will be compliant with competition law. This should only really be a concern where access to the system is necessary to participate in a market, and where the refusal to grant access could not be objectively justified (for example, where the third party did not have sufficient cyber-security controls).

Collusion risk

Some commentators have noted the concern that blockchain could facilitate collusion among participants in any given system. One *Financial Times* columnist has written that "what the technology really facilitates is cartel management",[8] perhaps mindful of Adam Smith's famous suspicion that "people of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the pubic, or in so contrivance to raise prices".[9] Anticompetitive agreements between rivals could be algorithmically controlled, and pseudonymous participants would be harder to trace.

However, while it is true that new methods of communication allow new forms of organising and implementing cartel arrangements, at this stage, such concerns overstate the risk. Firms involved in standardisation discussions (including large financial institutions)

5 Paragraph 263 of the European Commission's guidelines on horizontal cooperation agreements, (2011/C 11/01).

6 See paragraph 280 of the European Commission's guidelines on horizontal cooperation agreements, (2011/C 11/01).

7 Paragraph 311 of the European Commission's guidelines on horizontal cooperation agreements, (2011/C 11/01).

8 Exposing the "If we call it a blockchain, perhaps it won't be deemed a cartel?" tactic (Izabella Kaminska, May 11, 2015).

9 Adam Smith *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), Book 1, Chapter X, paragraph 82.

should be well-versed in the compliance measures required to address competition law risk in any discussions involving competitors. Many will have enhanced their internal processes following competition investigations in recent years.[10] In any event, cartels still require human decision making and action. And as we set out below, competition authorities can be expected to be alive to new channels of communication. In that regard, it is worth recalling the Competition Market Authority's recent fines imposed on companies who used price-monitoring software to fix prices for posters sold online: an enforcement practice that would have been fanciful in the early days of the Competition Act 1998.[11]

Firms will, however, need to be aware of the risks of exchanging competitively sensitive information through blockchain recorded transactions, and ensure that where messages and blocks contain such information, encryption is used appropriately.

Review by competition authorities

Competition authorities do not always get it right when assessing practices in technology markets. For instance, the serious competition concerns raised in the AOL/Time Warner merger[12] (e.g. that the combined entity would be dominant in the markets for online music and music playing software) were quickly overtaken by events, as was the old (UK) Monopoly and Mergers Commission's concerns that Sega and Nintendo would remain dominant in games consoles.[13] Equally, the merger of Facebook with WhatsApp did not automatically qualify for scrutiny by the European Commission suggests that competition rules are not always equipped to cover fast-growing technology markets.[14]

That said, there are reasons to be optimistic that blockchain will develop with an appropriate level of scrutiny. The Financial Times article we cite wonders whether "antitrust authorities [would] be inclined to look the other way?". We would think not. Both the European Commission and the Financial Conduct Authority (the UK financial services regulator with concurrent competition powers) have bodies of work that include looking at blockchain. We expect authorities in key financial centres around the world (e.g. the US, Hong Kong, Japan, and Singapore) will also be monitoring the development of the technology. They might even find it useful in their own activities – for example, in a recent publication, the FCA looked at blockchain in the context of RegTech, that is, technology that could be used to make regulation (and, we assume, enforcement) more efficient and effective.[15] In the financial services sector, the future may well therefore see blockchain being utilised on both sides of the fence – to facilitate more efficient and secure transactions and to identify illegitimate uses of the technology.

A longer version of this article will appear in Norton Rose Fulbright's global legal and regulatory guide to blockchain technologies in early 2017.

10 Not least from the scale of the settlement In Re Credit Default Swaps Antitrust Litigation, 13-md-02476, U.S. District Court, Southern District of New York (Manhattan).

11 https://www.gov.uk/government/news/online-seller-admits-breaking-competition-law.

12 Case No COMP/M.1845 – AOL./Time Warner, paragraph 59 and 65.

13 Monopolies and Mergers Commission (1995) "Videogames: A report into the supply of video games in the UK".

14 Case No COMP/M.7217 – Facebook/ WhatsApp. WhatsApp's turnover did not exceed the relevant threshold for the deal to trigger European Commission review, despite WhatsApp being valued at $19 billion. The parties instead requested that the Commission assess the deal, using a process in Article 4(5) EUMR.

15 FS16/4: Feedback Statement on Call for Input: Supporting the development and adopters of RegTech.

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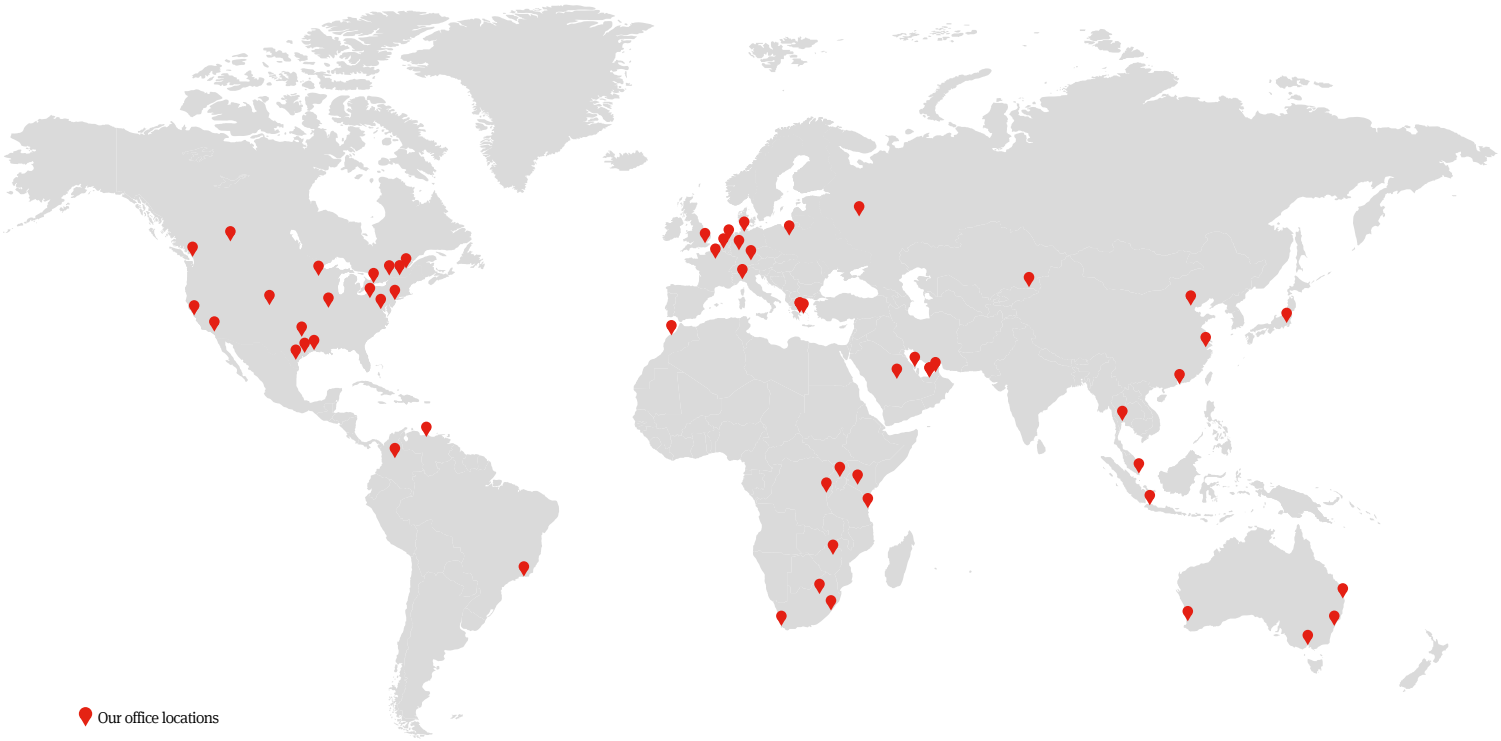

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