Digital Market Definition in the EU, US, and Brazil: Past, Present, and Future

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Abstract

Market definition is a core concept of competition law around the globe, including in the European Union, the United States, and Brazil. In all three jurisdictions, antitrust authorities are grappling with the challenges of digital markets, often dealing with the very same digital players. The provision of zero-price services, the multi-sided nature of many digital platforms and the implementation of entire digital ecosystems all challenge traditional approaches to market definition. But where there are common problems, there is a potential for common solutions. Through a comparative analysis of decisional practice relating to these past, present and future challenges of digital market definition, this contribution maps the common ground already achieved, while highlighting remaining gaps and possible solutions: For zero-price services – the past –, it shows how a consensus has emerged on the theory and possible tools to define markets for 'free' services. On multi-sided platforms – the present –, it finds that no such consensus has been reached yet, but strides are currently being made in developing an overall framework. And on digital ecosystems, it analyses how this challenge of the future requires the development of a coherent approach that can be based on cross-jurisdictional insights from the past and present.

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1 Introduction

The relevant market constitutes a core concept in competition law jurisdictions around the world. It is an analytical tool that helps in the assessment of anti-competitive agreements, unilateral conduct and mergers. In digital markets, however, the definition of markets in their product dimension has been challenging, as a number of market developments and market characteristics put the traditional notions of substitutability to the test.[1] Enforcers across the globe have faced three challenges in particular when attempting to define digital markets: zero-price services, multi-sided platforms, and ecosystems.

As this paper shows, these three challenges represent the past, present, and future of the digital market definition conundrum. 'Free' services and their absence of a monetary price require a recalibration of traditional market definition tools. While the competition law communities have grappled with zero-price services in the past, over time a consensus has emerged on the theory and possible tools to define markets for 'free' services. The prevalence of multi-sided platforms query how different and non-interchangeable market sides should be taken into account and what the role of the intermediary is. Multi-sided market definition has not yet reached a stage of consensus, but strides are currently being made by the decisional practice in developing an overall theory for which methodology can be conceived. Finally, the increasing establishment of digital ecosystems has called into question traditional patterns of substitutability. It is in the realm of ecosystem market definition that the most unknowns still persist, with little or no decisional practice yet.

This evolution of market definition challenges can be observed in multiple jurisdictions. The present contribution focuses on the decisional practice from three jurisdictions on three different continents, each bringing distinct insights to the table: the European Union (EU), the United States (US) of America, and Brazil. The EU was one of the first jurisdictions to submit prominent digital platforms to in-depth antitrust scrutiny, particularly through its three *Google* cases (2017–2019).[2] Also, the European Commission's soft law instrument on market definition is currently being reviewed in the light of digital markets.[3] The US is home to some of the most important digital platforms currently being scrutinised globally. Although the

[1] For a more comprehensive overview on challenges in digital market definition, see VHSE Robertson, 'Delineating Digital Markets under EU Competition Law: Challenging or Futile?' (2017) 12 *Competition Law Review* 131.

[2] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444; Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761; Commission Decision AT.40411, *Google Search (AdSense)* (2019) C(2019) 2173.

[3] Commission Notice on the definition of relevant market for the purposes of Community competition law (Market Definition Notice) [1997] OJ C372/5.

Federal Trade Commission (FTC) did relate to ongoing European cases in its analysis of Google's market behaviour and exchanged information on this with the European Commission, its antitrust enforcement in digital markets started off somewhat timidly.[4] In the autumn of 2020, however, a flurry of cases involving Google and Facebook were brought in the US.[5] In addition, the US Supreme Court decision in *Ohio v American Express* is an important milestone in multi-sided market definition.[6] Brazil is not only the most populated South American country, but its population has also been an avid adopter of digital platforms and digital technologies – leading to antitrust cases frequently involving the same set of digital platforms as in the EU and the US. In recent decisions involving Google,[7] the Brazilian competition authority CADE[8] actively engaged with the debate on market definition that originated in the EU and the US, and provided insights that can be used to move the global debate forward.

No jurisdiction is alone in its endeavour to account for these digital markets through antitrust market definition. Virtually identical cases – often involving the same digital platforms and sometimes even the same anti-competitive behaviour – are coming before courts and competition authorities around the globe. This presents a unique opportunity for the cross-fertilization of ideas as we improve our traditional approaches to antitrust market definition and develop new ones. A comparative view which looks at the evolution of decisional practice across jurisdictions makes it easier to spot trends, particularly when similar cases on the conduct of the same multi-national companies are being considered. This paper maps the common ground already achieved in the EU, US, and Brazil in zero-price services and multi-sided platforms, while also setting out the road ahead for digital ecosystems. While further research will certainly need to incorporate additional jurisdictions, our purpose is to highlight the areas where the jurisdictions can learn from each other, where they face the same challenges and may benefit from a cross-fertilisation of ideas. Looking at the consensus that has been achieved so far, while identifying the questions still remaining, enriches the global antitrust debate while helping a coherent approach to digital market definition to emerge. A thorough comparative analysis and discussion is a promising starting point for a cross-jurisdictional dialogue that can lead to such convergence.

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[4] Federal Trade Commission, File number 111-0163, *In the Matter of Google Inc.* (2012) Staff Memorandum, 2.
[5] Eg, *US v Google*, Case 1:20-cv-03010 (D.D.C., filed on 20 October 2020); *Federal Trade Commission v Facebook*, Case 1:20-cv-03590 (D.D.C., filed on 9 December 2020); *Texas et al. v Google*, Case 4:20-cv-957-SDJ (E.D. Tex., filed on 16 December 2020).
[6] *Ohio et al. v. American Express Co.*, 585 U.S. ___ (2018), 138 S. Ct. 2274 (2018).
[7] Eg, see Case 08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda / Google Brasil* (2019) Superintendência-Geral Análise antitruste 2, paras 90–114 (dealing with Google investigations and cases in the US and EU).
[8] Conselho Administrativo de Defesa Econômica (CADE), Administrative Council for Economic Defense.

The contribution proceeds as follows: First, section 2 briefly surveys the general approach to market delineation in the EU, US, and Brazil. While most readers will already be familiar with one or even two of these jurisdictions, this rarely applies to all three jurisdictions covered, making it important to reach some common ground as the basis for the subsequent analysis. Based on these general insights on market definition, section 3 embarks on a comparative discussion of market definition in digital markets in the EU, US, and Brazil. This section particularly focuses on zero-price services ('the past'), multi-sided platforms ('the present'), and the concept of digital ecosystems ('the future'). It surveys similar or identical cases that all three jurisdictions have dealt with. This allows for some comparative insights, tracing the evolution of digital market definition and sketching how new approaches to market definition are being navigated across these three continents. The contribution closes with comparative conclusions on the past, present, and future of digital market definition in the EU, US, and Brazil.

2 The Relevant Antitrust Market in the EU, US, and Brazil

The main parameters of market definition are strikingly similar in the EU, US, and Brazil. The following briefly sets out the respective legal framework and the soft law guidance adopted by the competition authorities. Readers already familiar with market definition in all three jurisdictions are invited to directly jump to the comparative conclusions in section 2.3.

2.1 Market definition as a Legal Requirement

Under EU competition law, the relevant market is a quintessential tool. It is employed for the analysis of anti-competitive agreements (Article 101 of the Treaty on the Functioning of the European Union or TFEU),[9] abuse of a dominant position (Article 102 TFEU) and mergers (EU Merger Regulation).[10] Binding block exemption regulations as well as non-binding soft law guidance issued by the European Commission rely on market share thresholds, which presuppose the delineation of a relevant market.[11] As the European Union's General Court has

[9] Consolidated Version of the Treaty on the Functioning of the European Union (TFEU) [2016] OJ C202/47.
[10] Council Regulation (EC) 139/2004 on the control of concentrations between undertakings (EU Merger Regulation) [2004] OJ L24/1.
[11] E.g., see Commission Regulation (EU) 330/2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices [2010] OJ L102/1, art 3(1); Notice on agreements of minor importance which do not appreciably restrict competition under Article 101(1) of the Treaty on the Functioning of the European Union (*De Minimis* Notice) [2014] OJ C291/1, para 8. For possible functions of the relevant market beyond market power assessments, see VHSE Robertson, *Competition Law's Innovation Factor: The Relevant Market in Dynamic Contexts in the EU and the US* (Hart Publishing 2020); M Eben, 'The Antitrust Market Does Not Exist: Pursuit of Objectivity in a Purposive Process' (forthcoming 2021) *Journal of Competition Law and Economics*, DOI: 10.1093/joclec/nhab001.

emphasised, the relevant market cannot be defined in the abstract, but needs to be delineated on a case-by-case basis.[12]

The European Commission as the prime EU-wide enforcer of EU competition law has issued soft law guidance on market definition in the shape of its 1997 Market Definition Notice. That Notice understands market definition as 'a tool to identify and define the boundaries of competition between firms'.[13] The Market Definition Notice is currently under review in order to bring it up-to-date with developments in digital markets,[14] such as those discussed below. While the Commission generally enjoys discretion in carrying out complex economic assessments, this discretion is not unlimited.[15] In particular, the Commission is legally bound by the Market Definition Notice as itself has issued that guidance, thus giving rise to legitimate expectations.[16]

Under US antitrust law, 'market definition generally determines the result of [any antitrust] case'.[17] It is used in the assessment of anti-competitive agreements (§ 1 Sherman Act),[18] monopolisation and attempted monopolisation (§ 2 Sherman Act) as well as for merger control (§ 7 Clayton Act).[19] While the legal provisions rely on different wordings, with § 7 Clayton Act referring to 'line of commerce' and § 2 Sherman Act referring to 'a part of trade or commerce,' the US Supreme Court has clarified that both relate to the same concept of a relevant market.[20] In their current Horizontal Merger Guidelines of 2010, the Department of Justice and the FTC have de-emphasised the importance of market definition for merger control.[21] This development, however, has not been followed by the courts.[22] The Horizontal Merger Guidelines also exclusively focus on demand-side substitutability, thereby possibly contradicting the precedent of the Supreme Court.[23] Contrary to the European soft law on

[12] Case T-301/04 *Clearstream v. Commission* EU:T:2009:317, para 55.
[13] Market Definition Notice, para 2.
[14] European Commission, 'Evaluation of the Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law' <https://ec.europa.eu/competition/consultations/2020_market_definition_notice/index_en.html> accessed 31 May 2021.
[15] Case T-201/04 *Microsoft v. Commission* EU:T:2007:289, para 482; Case T-321/05 *AstraZeneca v. Commission* EU:T:2010:266, para 33; Case T-691/14 *Servier v. Commission* EU:T:2018:922.
[16] Case T-210/01 *General Electric v. Commission* EU:T:2005:456, para 516.
[17] *Eastman Kodak v. Image Technical Services*, 504 U.S. 451, 469 fn 15 (1992). See also JB Baker, 'Market Definition: An Analytical Overview' (2007) 74 *Antitrust Law Journal* 129, 129.
[18] Sherman Antitrust Act (1890), 15 USC §§ 1–7, as amended.
[19] Clayton Antitrust Act (1914), 15 USC §§ 12–27, as amended.
[20] *United States v. Grinnell Corp*, 384 U.S. 563, 573 (1966).
[21] US Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines (19 August 2010) (US Horizontal Merger Guidelines 2010) § 4.
[22] Robertson (n 11) 35; Eben (n 11).
[23] US Horizontal Merger Guidelines 2010, § 4; contrast this with *United States v. Columbia Steel Co*, 334 U.S. 495 (1948).

market definition, the US soft law guidance on market definition only applies to merger control. In practice, of course, its application has gone beyond mergers.[24]

Brazilian competition law also heavily relies on the definition of a relevant market. In fact, the Brazilian Competition Act of 2011 explicitly refers to the concept of a relevant market on numerous occasions:[25] Article 36 of the Act contains prohibitions in the area of anti-competitive agreements and single firm conduct, both contained in a single article.[26] It lists, as one possible infringement, the control of a relevant product market. Article 36(3) of the Act defines that a dominant position is deemed to exist from a 20% share of the relevant market. And in merger control, mergers that may create or strengthen a dominant position or that may lead to the elimination of competition in a substantial part of the relevant market are to be prohibited.[27] The frequent mention of the relevant market concept may also be due to the fact that Brazilian competition law is younger than its EU and US counterparts, and thus more up-to-date in some of the terminology it relies on.

CADE as the prime public enforcer of Brazilian competition law has issued a number of soft law instruments that are directly relevant to market definition. A CADE Resolution of 1999[28] contains steps that need to be taken when assessing restrictive trade practices, including anti-competitive agreements and abuse of dominance. The first step to analyse the market conditions is to delineate the relevant market in its product and geographic dimensions.

CADE's Horizontal Merger Guidelines of 2016 contain an entire section dedicated to the delineation of the relevant market. They foresee that, under a traditional analysis, market definition is the first step in a merger assessment.[29] However, they also acknowledge alternative options to analyse mergers that do not exclusively focus on market definition – for instance where multi-sided markets are concerned.[30] The outcome of dominance cases under Brazilian competition law frequently hinges on the market definition, demonstrating the central

[24] See also MA Glick, DJ Cameron and DG Mangum, 'Importing the Merger Guidelines Market Test in Section 2 Cases: Potential Benefits and Limitations' (1997) 42 *Antitrust Bulletin* 121, 122, 150.
[25] Law No 12,529, of 30 November 2011 (Brazilian Competition Act), replacing the previous Competition Act of 1994 (Law No 8,884, of 11 June 1994).
[26] The Brazilian Competition Act 2011, as its predecessor, does not contain separate provisions for these different types of anti-competitive behaviour; see also J Clark, 'Competition Law and Policy in Brazil – A Peer Review' (OECD and IDB Report 2010) 12 <https://www.oecd.org/daf/competition/45154362.pdf> accessed 31 May 2021.
[27] Brazilian Competition Act 2011, Article 88(5). See para 6 of that provision for exceptions to the prohibition rule.
[28] This Resolution was adopted under the Brazilian Competition Act of 1994, but has not yet been replaced by an updated version.
[29] CADE, Guia para análise de atos de concentracao horizontal (July 2016) (Brazilian Horizontal Merger Guidelines) 9.
[30] Ibid 10, 58.

importance of this analytical step under Brazilian law.[31] Market definition is also central to merger inquiries, where market definition has sometimes been described as one of contextualisation, serving as the basis for establishing the scope of the application of competition law and as the area in which necessary competitive constraints had to be assessed.[32]

2.2 Product Markets and Substitutability

The relevant product market includes, according to the European Commission's Market Definition Notice, 'all those products […] which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use'.[33] In the words of the EU's General Court,

> [t]he concept of the relevant market in fact implies that there can be effective competition between the products or services which form part of it and this presupposes that there is a sufficient degree of interchangeability between all the products or services forming part of the same market in so far as a specific use of such products or services is concerned […]. The interchangeability or substitutability is not assessed solely in relation to the objective characteristics of the products and services at issue, but the competitive conditions and the structure of supply and demand on the market must also be taken into consideration […].[34]

As the Court of Justice has underlined, the relevant market needs to be delineated with reference to demand-side and supply-side substitutability.[35] Based on the criterion of sufficient interchangeability, only those goods or services that are sufficiently substitutable belong to one relevant market. To ascertain this sufficient interchangeability, the degree to which products are interchangeable and the competitive situation between them need to be taken into account.[36]

Similarly, in the US, the relevant product market includes all products that are functionally interchangeable with each other, based on demand-side and supply-side substitutability.[37] In

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[31] Eg, see *Shopping Iguatemi*, CADE Decision No 08012.006636/1997-43 (4 September 2007); Clark (n 26) 25–26. Case upheld on appeal in Tribunal Regional da 1ª Região, Case No 2008.01.00.024062-2 (26 September 2008). On the importance of market definition in the radius cases, see also L Machado de Souza, 'Cláusula de raio na perspectiva do direito concorrencial: decisões do Cade e reflexos nos tribunais' in F Chiarello de Souza Pinto, MF de Castro and GM Bester (eds), *Direito e economia II* (2014) 302.

[32] G Onto, 'O mercado como um contexto: Delimitando o problema concorrencial de uma aquisição empresarial (2016) 22 *Horizontes Antropológicos* 155, 168–175; referring to CADE, 'Cade aprova, com restrição, compra da Webjet pela Gol' (10 October 2012) <https://www.gov.br/cade/pt-br/assuntos/noticias/cade-aprova-com-restricao-compra-da-webjet-pela-gol> accessed 31 May 2021.

[33] Market Definition Notice, para 7.

[34] Case T-427/08 *CEAHR v. Commission (Swiss watchmakers)* EU:T:2010:517, para 67.

[35] See, e.g., Case 6/72 *Europemballage and Continental Can v. Commission* EU:C:1973:22, paras 32 f.

[36] Case 85/76 *Hoffmann-La Roche v. Commission* EU:C:1979:36, para 28; Case T-504/93 *Tiercé Ladbroke v. Commission* EU:T:1997:84, para 81; Case T-340/03 *France Télécom v. Commission* EU:T:2007:22, para 80; Case T-427/08 *Swiss watchmakers* EU:T:2010:517, para 67.

[37] *United States v. Corn Products Refining Co*, 234 Fed. 964 (SDNY 1916), appeal dismissed in *United States v. Corn Products Refining Co*, 249 U.S. 621 (1918); *Times-Picayune Publishing Co v. United States*, 345 U.S. 594, 612 fn 13 (1953).

its *Cellophane* case, the US Supreme Court relied on both qualitative and quantitative analysis to delineate the relevant market: As a qualitative element, it assessed the price, use and quality of a product. From a quantitative side, it emphasised that cross-price elasticity of demand should be measured.[38] This approach demonstrates that qualitative and quantitative methods can be combined in order to delineate a relevant market.

The Supreme Court has provided guidance on how to measure interchangeability, i.e. turning this originally qualitative criterion into more of a quantitative one. It stated that, when assessing interchangeability, one needed to consider that 'customers may turn to [substitute products] if there is a slight increase in the price of the main product'.[39] This foreshadowed the hypothetical monopolist test. The US Department of Justice, one of the two federal agencies entrusted with public antitrust enforcement in the US, first included the hypothetical monopolist test in its 1982 Merger Guidelines. It stated that a relevant antitrust market is

> a group of products and an associated geographic area such that ([i]n the absence of new entry) a hypothetical, unregulated firm that made all the sales of those products in that area could increase its profits through a small but significant and non-transitory increase in price (above prevailing or likely future levels).[40]

The hypothetical monopolist test remains a central part of the US Horizontal Merger Guidelines to this day. The Guidelines are now jointly issued by the Department of Justice and the FTC.[41] When applying the test, however, particular caution needs to be exercised where market prices are already at supracompetitive levels. As is shown by the so-called cellophane fallacy, named after the Supreme Court case of the same name mentioned above,[42] where the market price for a product is already above competitive levels, the small but significant non-transitory price increase of the hypothetical monopolist test may be such that customers turn to products that they do not regard as substitutable.[43] Therefore, the benchmark for the hypothetical monopolist test should be the competitive price, if such is ascertainable.

In the EU, there has also been reference to the hypothetical monopolist test. The Market Definition Notice operationalises the substitutability tests that the EU Courts – consisting of the General Court and the Court of Justice – have established with the help of the so-called SSNIP test: A **s**mall but **s**ignificant **n**on-transitory **i**ncrease in **p**rices in the area of 5-10% is

[38] *United States v. E I du Pont de Nemours & Co (Cellophane)*, 351 U.S. 377, 380 (1956).
[39] *United States v. Grinnell Corp*, 384 U.S. 563, 571 (1966).
[40] US Department of Justice, 1982 Merger Guidelines (1982) § II fn 6.
[41] US Horizontal Merger Guidelines 2010.
[42] See *United States v. E. I. du Pont de Nemours & Co. (Cellophane)*, 351 U.S. 377 (1956).
[43] See also Market Definition Notice, para 19.

modelled upon the competitive price, and the products that customers turn to in reaction to the price increase are included in the candidate market.[44]

In Brazil, under its Guidelines, CADE will assess the relevant product market based on demand-side substitutability focused on the product characteristics, prices and use. It will take into account a host of factors when delineating the relevant market, including customer profiles, the nature and characteristics of the products, the importance of price and quality for these products, evidence of changes in customers' buying patterns in the past, and evidence of price discrimination.[45] This comprehensive list of factors showcases the breadth of the market definition exercise that CADE regards as necessary and informative for the subsequent substantive assessment. The guidance then outlines the hypothetical monopolist test, in accordance with international practice.[46] CADE also mentions the hypothetical monopolist test as a possible tool.[47] The hypothetical monopolist test is applied to both mergers and antitrust cases.

The Guidelines also outline the methodology that CADE follows to define the relevant market: CADE will either alternatively or simultaneously rely on qualitative information, price information, an analysis of the flow of goods and of customers, the definition of a radius, and quantitative methods such critical loss analysis.[48] However, CADE will only take supply-side substitution into account to complement demand-side assessments, and the Guidelines underline that this is also in accordance with international practice.[49]

While the relevant antitrust market encompasses both a product dimension as well as a geographic dimension,[50] this paper focuses on the product market dimension in digital market environments.

2.3 Comparative Insights

EU, US and Brazilian competition laws all heavily rely on the relevant market as an analytical tool. These three jurisdictions have in common that market definition is understood as having

[44] Market Definition Notice, para 17.
[45] Brazilian Horizontal Merger Guidelines 13–14. On the minor role of supply-side substitution, see ibid 17.
[46] Ibid 17–18.
[47] CADE Resolution No 20 (1999), Annex II. The hypothetical monopolist test is further detailed in a Working Paper of the Department of Economic Studies and the Working Group on Methods in Economics, 'Delimitação de Mercado Relevante' (Working Paper No 001/10, November 2010).
[48] Brazilian Horizontal Merger Guidelines 18–20.
[49] Ibid 17.
[50] The 'section of the country' referred to in § 7 Clayton Act refers to a geographic market; see *United States v. Bethlehem Steel Corporation*, 168 F. Supp. 576, 587 f (SDNY 1958). In the European Commission's Market Definition Notice, para 8, a definition is given of a relevant geographic market: 'the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogeneous'.

both a qualitative and a quantitative side to it. However, while market definition is mainly developed through court judgments and by the competition authorities in the EU and US, the situation is somewhat different in Brazil, where the Competition Act of 2011 itself already contains numerous references to the relevant market concept. This provides an important impetus for competition law practice to more actively engage with this concept – something that has also occurred, as the cases analysed below will demonstrate.

The specificities of market definition, and the way in which the competition authorities intend to rely on this analytical tool, are published in soft law instruments in all three jurisdictions. While the EU's Market Definition Notice applies to all areas of competition law, the US and Brazilian soft law instruments that contain the most detailed treatment of market definition are their respective Horizontal Merger Guidelines. In the US in particular, the hypothetical monopolist test was developed in the framework of merger review. In the EU and Brazil, on the other hand, the theoretical framework for market definition was meant to encompass all areas of competition law from the outset. The hypothetical monopolist test is almost identical in the three jurisdictions, not least because economics serves as the focal point for this test.[51]

While there has been some debate on whether the market definition exercise needs to be adapted depending on the area of competition law under scrutiny, such a differentiation would be inadequate in the face of a uniform prohibition such as the prohibition of anti-competitive agreements and unilateral conduct in the Brazilian Competition Act. The same should also apply to other jurisdictions. As the European Commission has highlighted, the methodology of market definition should remain the same in all areas of competition law, even if the resulting markets can differ depending on the nature of the inquiry.[52]

A de-emphasis of market definition for merger control has taken a hold at both the US and the Brazilian competition authorities, with both stressing in their most recent respective Horizontal Merger Guidelines that under certain circumstances, merger control need not start with market definition. In the Brazilian *Google Shopping* case, it was also held that an abusive unilateral conduct could be determined even if no exact market could be delineated; the Superintendent argued that the relevant market was a supporting framework for the substantive

[51] On the substantive differences between the European and the US version of the hypothetical monopolist test, see G Niels, H Jenkins and J Kavanagh, *Economics for Competition Lawyers* (2nd ed, OUP 2016) §§ 2.72–2.74.
[52] Market Definition Notice, paras 1, 12; GJ Werden, 'Market Delineation Under the Merger Guidelines: Monopoly Cases and Alternative Approaches' (2000) 16 *Review of Industrial Organization* 211.

analysis.[53] As far as can be seen, this view has not yet been voiced by the European Commission. However, the Commission has developed alternative ways of defining the relevant market – e.g., through its innovation spaces approach[54] – to take into account developments that have not yet led to the emergence of a proper relevant market.

Substantively, the substitutability patterns that market definition strives to use as a benchmark for a relevant market are very much converging in the three jurisdictions, relying on near-identical qualitative criteria (product characteristics, price and intended use) as well as quantitative measurements (hypothetical monopolist or SSNIP test). While minimal substantive differences can be observed in theory,[55] there can also be some divergence in the application of these general principles. As the following sections on market definition for digital markets show, frictions can arise when similar markets are delineated based on the same general principles in different jurisdictions – particularly in areas of the economy that are not yet marked by well-established ways of delineating the relevant antitrust market.

3 Market Definition for Digital Markets: Past, Present, and Future

In the EU, US, and Brazil, market definition is the first step in most antitrust assessments of mergers and unilateral conduct, and plays important roles in cases of collusion. Whenever players in a complex or novel industry become the subject of competition law attention, a first – if not *the* first – question is therefore 'in which market(s) do these activities take place?'. For most industries, this question is quickly answered. Even where scholars and enforcers fail to reach a single definite conclusion, they usually do agree on the fundamentals of the markets concerned: the products, the key players, the affected customers. Yet, despite over a decade of debate about digital markets, authorities and courts around the world still struggle to delineate product markets for digital services, and to develop consistent principles and processes for 'digital' market definition.

Market definition, its methods and tests, were designed within the context of 'brick-and-mortar' products and business models, which were for the most part produced and offered in

[53] Case n.08012.010483/2011-94, *E-commerce Media Group Informação e Tecnologia Ltda/Google Brasil*, parecer 016-SCD/MPF/CADE – 2019, para 25 ('não seria necessário definir o mercado relevante exato para concluir pela existência da conduta anticompetitiva'); Processo Administrativo n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) Superintendência-Geral Análise antitruste 1, paras 128–133 and Superintendência-Geral Análise antitruste 2, para 142.
[54] Commission Decision M.7932, *Dow/DuPont* [2017] OJ C353/9; Commission Decision M.8084, *Bayer/Monsanto* [2018] OJ C456/10.
[55] See n 51.

relatively static conditions. Although defining geographic markets may come with its own intricacies, particularly in the context of e-commerce, it is primarily the product dimension of antitrust markets which poses challenges online. Increased product complexity, coupled with rapid innovation and short demand lifetimes, have rendered the boundaries of the product market increasingly fuzzy.[56] This lack of specificity, within a process focused on the drawing of clear-cut boundaries based on substitutability, raises a myriad of issues, three of which stand out for their relationship to each other and their prevalence in academic discourse and enforcement: zero-price services, multi-sided platforms, and digital ecosystems. As decisional practice progresses, so does the capability of addressing these challenges. In the following, each of these issues will be explored in turn, observing the key problems each presents and looking at first solutions adopted in the decisional practice of the EU, US, and Brazil. This comparative analysis shows that in all three jurisdictions there has been a marked progress on these challenges, with a similar evolution: a consensus on theory and possible methods now exists for zero-price services, strides are being made towards a possible converging framework for multi-sided platforms, but the most work still has to be done on ecosystems. This analysis points to the available scope for cross-jurisdictional convergence in digital market definition.

3.1 The Past: Zero-Price Services

3.1.1 Market Definition without Money

Many digital services are offered 'for free' – i.e., in exchange for the user's data and attention rather than for a monetary price. Facebook connects people with each other without asking them to swipe their credit cards, Google enables people to find information without asking them to input their bank details. The ability of these businesses to offer a service at a monetary price of zero is usually underpinned by the adoption of a multi-sided strategy:[57] the users of the social network or the search engine may not be handing over cash, but they are paying attention to advertising or are the subjects of data-analytical products.[58]

In the early days of digital markets, the lack of a monetary exchange between users of these services and the undertakings offering them had far-reaching consequences for market definition. 'Free' was a concept with an almost magical effect: it not only induced consumers

[56] Robertson (n 1) 133; M Eben, *Addressing the Main Hurdles of Product Market Definition for Online Services: Products, Price, and Dynamic Competition* (2019) (PhD thesis) 103.
[57] On the challenge of multi-sided markets for market definition, see section 3.2.
[58] M Eben, 'Market Definition and Free Online Services: The Prospect of Personal Data as Price' (2018) 14 *I/S Journal of Law and Policy for the Information Society* 224.

to increased appreciation of a product (the 'zero-price effect'),[59] but prompted competition authorities to believe that the undertakings could not be subjected to antitrust scrutiny. The lack of a monetary price for certain (digital) services led authorities and courts to show a reluctance to intervene in the activities of the undertakings who supplied them. A US court infamously held that Google did not charge a price for its search services and therefore did not operate in a market.[60] The court declared that antitrust law does not 'concern itself with competition in the provision of free services' and that Google or other search providers do not '*sell* … search services'.[61] If this were true, undertakings offering 'zero-price' search, social networking, content streaming, or other services could never be held accountable for restricting competition. This reluctance to acknowledge that the offer of 'free' services is an economic activity qualifying as an antitrust market was not exclusively a US attitude. In the EU, the European Commission was hesitant about acknowledging a trade relationship between users and providers of 'free' services, though it did not go so far as explicitly holding that no market existed.[62] If there was no trade and thus no market, the market definition question would of course be moot. Yet this approach did not hold for long.

We have come a long way in a short time. Authorities and courts have come to accept that 'free' does not equal the absence of a commercial relationship between the users of a service and the undertaking providing it.[63] These users are customers, offering access to their personal information or to their attention, enabling the undertaking to monetise their presence on the platform.[64] In its *Google Search (Shopping)* decision of 2017, the European Commission acknowledged that the provision of search services, as offered by Google, constitutes an economic activity. Even though users of the service do not provide monetary consideration, they provide the data which is used to offer advertising services to the other group on the platform.[65] In Germany, the competition law code now explicitly states that it is possible to define a relevant market even when a service is provided free of charge.[66] In Brazil, CADE

[59] C Anderson, *Free: The Future of a Radical Price* (Random House Publishing 2009) 55; MS Gal and DL Rubinfeld, 'The Hidden Costs of Free Goods: Implications for Antitrust Enforcement' (2016) 80 *Antitrust Law Journal* 521.
[60] *Kinderstart.com, LLC v. Google, Inc*., No. C 06-2057 JF (RS), 2007 WL 831806 (N.D. Ca. Mar. 16, 2007).
[61] *Kinderstart.com, LLC v. Google, Inc*., No. C 06-2057 JF (RS), 2007 WL 831806 (N.D. Ca. Mar. 16, 2007) para 5 (emphasis added).
[62] Commission Decision IV/M.553, *RTL/Veronica/Endemol* [1996] OJ L 294/14, para 17.
[63] E.g. *Gottlieb v. Tropicana Hotel & Casino* (2000), 109 F. Supp. 2d 324, 329 (E.D. Pa. 2000).
[64] Eben (n 58) 224.
[65] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444, paras 158 and 198. This was repeated in Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761, paras 325–329.
[66] § 18 (2)(a) GWB, BGBl I 2013/32, 1750 as last amended by BGBl I 2021/1, 2.

referred to advertising as a means to monetise a free service,[67] considering it part of a product offered to users as well as to advertisers and thereby eloquently leaving to the side any possible claim that this was a 'non-market' from a competition perspective.

Although explicit recognition that a market can exist was an important first step, market definition for zero-price systems still came with considerable practical challenges. The hypothetical monopolist or SSNIP test relies on price increases to identify the relevant antitrust market. Where no monetary price exists, such a price-based quantitative test cannot be carried out without a significant tweak. Thus, either these quantitative tools need to be adapted to fit the 'zero-price' reality, or enforcers will have to resort to qualitative analysis. The decisional practice has made great strides in accepting alternatives to the SSNIP test.

3.1.2 Decisional Practice

In all three jurisdictions, there have been attempts to adapt the SSNIP test to services for which no monetary price is charged. In the *Streamcast* case, a US court evoked the possibility of defining a market by imagining a price where none existed: the court stated that there was no indication that users would not switch if 'even a nominal price' were charged for a service which had previously been offered for free.[68] This suggests a SSNIP test where the price increase would consist of going from *no* price to any price starting from 0.01 €/$/R$. Such a reimagining of the SSNIP test is problematic because it overlooks the zero-price effect advanced in the literature.[69] Going from a zero price to *any price at all*, no matter how small, will fundamentally change the nature of the product in the minds of consumers. An alternative exists where the service is part of a multi-sided strategy, and the costs of one side can be reallocated to another side in order to hypothesise a price. In its *Google* investigation, which was ultimately closed, FTC staff adopted a similar conceptualisation, suggesting that a SSNIP could be applied to horizontal search queries:

> The fact that horizontal search services are currently provided free-of-charge to end users does not materially impact the analysis here. This is a two-sided market where the service costs to end users have been shifted to advertisers. But advertisers' willingness to bear these costs will be directly impacted by the consumer demand for them. We therefore analyze the cross-elasticity of demand here just as if consumers were directly bearing the costs themselves.[70]

[67] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) Superintendência-Geral Análise antitruste 01 para 8, see also voto Bandeira Maia, para 149; Case n.08700.005694/2013-19 Superintendência-Geral Análise antitruste 1, para 21.
[68] *Streamcast Networks, Inc. v. Skype Techs., S.A.* (2007). 547 F. Supp. 2d 1086 (C.D. Cal. 2007) § 1095.
[69] K Shampanier, N Mazar and D Ariely, 'Zero as a Special Price: The True Value of Free Products' (2007) 26 *Marketing Science* 742.
[70] Federal Trade Commission, File Number 111-0163, *In the Matter of Google Inc*. (2012) Staff Memorandum 65, fn 369 on p 143.

Applying a SSNIP is not the only option. Both the European Commission and CADE have indicated some willingness to move away from price-based tests and towards quality-based quantitative tests. In merger decisions like *Facebook/WhatsApp* and *Microsoft/LinkedIn*, the European Commission recognised that quality is an important parameter of competition in digital services.[71] It later indicated its willingness to consider quality in its substitution analysis, by noting in *Google Search (Shopping)* that users were unlikely to multi-home 'even if Google were to degrade the quality of its general search service'.[72] In its *Google Shopping* case, CADE confirmed that quality reductions could be used to assess potential substitution and thus market power, by hypothesizing that it may be possible that users would still stay with the search providers even if the quality of its search results were to deteriorate as a result of a reduction in investment in their quality.[73] Such a quality reduction was considered to be 'equivalent to a price increase'.[74] In *Google Android*, the Commission considered an SSNDQ[75] test as one alternative to the SSNIP test when defining the market for Android app stores: Would original equipment manufacturers (OEMs) include a different app store on their mobile devices in the event of deterioration of the quality of the Android app store? Such quality deterioration was understood to include but not be limited to 'search functions within the store, presentation of the results, offer of special deals, update features'.[76] These quality criteria seem to have been based on internal company documentation, and there is some indication that Google may have pushed back against this open-ended list.[77] Indeed, for an SSNDQ test to be workable, more clarity is needed on the meaning of quality and the weight to be attributed to each parameter, which cannot be achieved merely through a non-exhaustive illustrative list.

Quality is not the only possible parameter in a reimagined quantitative test based on the hypothetical monopolist test. A SSNIP test could include other media of exchange or costs – such as personal data or attention – that users provide in exchange for the use of the service.[78] Although both the decisional practice as well as legislation increasingly understand data and

[71] Commission Decision COMP/M.7217, *Facebook/WhatsApp* (2014) C(2014) 7239, para 87; Commission Decision COMP/M.8124, *Microsoft/LinkedIn* (2016) C(2016) 388.
[72] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444, paras 242, 312–313.
[73] Case n.08012.010483/2011-94, Nota técnica 34/2018/DEE/CADE, 44: 'investir menos em qualidade, piorando um pouco os resultados de busca'.
[74] Ibid, 54.
[75] **S**mall but **s**ignificant **n**on-transitory **d**ecrease in **q**uality.
[76] The Commission reiterated that the SSNIP test is not the only tool available in Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761, para 286. See also paras 390–398 for further reflections on SSNDQ in the context of OS-specific mobile web browsers.
[77] Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761, para 296.
[78] Eben (n 58) 224; JM Newman, 'Antitrust in Zero-Price Markets: Applications' (2016) 94(1) *Washington University Law Review* 66.

attention to constitute remuneration or consideration in digital markets,[79] there have not been any comprehensive attempts to incorporate personal data-SSNIP tests or SSNIC[80] tests into the practice of market definition. As it stands, there seems to be agreement that quantitative tests can be applied which replace 'price' with another parameter, with a particular emphasis on SSNDQ tests. The decisional practice exists, and now needs to be further developed, so that a clear and robust approach emerges to identify and weigh quality parameters.

Even when such reimagined quantitative tests cannot be applied, it remains a possibility to identify substitutes through a qualitative analysis of the wants of consumers and the characteristics of the products available to them. Indeed, authorities have at times forfeited quantitative tests in favour of qualitative assessments, especially when there are obstacles to performing SSNIP tests. The European Commission has insisted that, when the SSNIP test is not suited to a particular case, it is preferable to 'identif[y] product characteristics for which conditions of competition are homogeneous'.[81] This argument in favour of a return to qualitative analysis has found its way into the debate on digital market definition.[82] The challenge, then, lies in identifying the characteristics of products which truly influence purchase decisions and exercise competitive constraints, rather than focusing on parameters which hardly matter to customers or matter solely to customers whose number is too small to influence an undertaking's conduct.[83]

In the Brazilian *Google Shopping* case, the Superintendent and several Commissioners distinguished between general sponsored search and vertical search, such as comparison shopping, by reference to the functions of these services and the number of times a user gets redirected.[84] Although Commissioner Bandeira Maia eventually accepts this distinction drawn by the Superintendent, he notes that there could be an argument against such segmentation. Referring to the functionalities of Google's search engine, which shows any relevant results which match the search query regardless of whether these are general or vertical results, he

[79] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444, paras 158, 198; Commission Decision AT.40099, *Google Android* (2018) paras 325–329; Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) para 8, voto Bandeira Maia, para 149; Case n.08700.005694/2013-19, *Google Inc. e Google Brasil Internet Ltda* (2019) para 17; § 18(2)(a) GWB; EU Proposed Digital Content Directive (2015), Article 3 and recitals 13–14; Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services [2019] OJ L136/1, recitals 24–25.

[80] **S**mall but **s**ignificant **n**on-transitory **i**ncrease in **c**osts.

[81] Commission Decision COMP/M.6570, *UPS/TNT EXPRESS* (2013) C(2013) 431, para 154.

[82] Broos and Ramos (n 87) 396.

[83] As the Commission did in *United Brands*; see Case 27/76 *United Brands v. Commission* [1978] ECR 207, para 31.

[84] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) Superintendência-Geral, paras 125–134.

implies there could be a single comprehensive market.[85] This type of qualitative assessment strongly relies on the functionalities or characteristics of a product. The European *Google Search (Shopping)* highlighted a similar struggle when it discussed both insights from user surveys on the use of price comparison vs multi-trader e-commerce platforms, and the functionalities of these different platforms.[86] The challenge, then, is to decide on which qualitative analysis to follow to establish the relevant market.

On the whole, it is clear that headway is being made: First of all, there now seems to be a consensus in the three jurisdictions that zero-price services *do* merit the definition of an antitrust market. In addition, there is also agreement that quantitative tests could be developed for this zero-price reality. Decrease in quality is the primary parameter which has been advanced in decisional practice as a potential replacement for increases in price, though the scope of quality requires further refinement. The particular strength of quantitative frameworks is that they provide an underlying logic to analyses, which can provide reproducible methods and results. Where a conventional quantitative analysis is not possible, this strength needs to be harnessed for qualitative frameworks of analysis to make them more robust. Here, competition authorities and courts applying the antitrust provisions are well-advised to look to each other's experience for inspiration on how this can be achieved. Tools developed in one jurisdiction can easily be applied in another, and the more experience is gathered on applying these tools, the more robust they will become.

3.2 The Present: Multi-sided Platforms

3.2.1 Multi-sided Market Definition

The challenge of defining markets in the absence of prices is linked to another challenge: that of accounting for multi-sidedness when delineating relevant market(s). This has been and currently is the most active consideration in digital market definition.[87] Decisional practice in the three jurisdictions has not yet fully resolved this challenge, though it has made considerable

[85] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) voto Bandeira Maia, paras 117–125.
[86] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444, paras 220–222.
[87] For scholarship, see e.g. DS Evans and R Schmalensee, 'The Antitrust Analysis of Multi-Sided Platform Businesses' (2013) *NBER Working Paper* 18783; F Thépot, 'Market Power in Online Search and Social Networking: A Matter of Two-Sided Markets' (2013) 36 *World Competition* 195; D Auer and N Petit, 'Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy' (2015) 60 *Antitrust Bulletin* 426; S Broos and JM Ramos, 'Competing Business Models and Two-Sidedness: An Application to the Google Case' (2017) 62 *Antitrust Bulletin* 382; S Holzweber, 'Market Definition for Multi-Sided Platforms: A Legal Reappraisal' (2017) 40 *World Competition* 563.

advances in recent years, taking steps towards but not quite achieving a coherent framework for multi-sided market definition.

A multi-sided platform caters to distinct groups of customers, who are brought together on the platform. The company operating the platform gathers these distinct customer groups on its platform because it can internalise indirect network effects between them, generating revenue for the platform and benefits for the customer groups.[88] The platform enables different groups to benefit from the presence of the other groups in a way they could not have achieved (to the same extent) on their own.[89]

The literature makes a distinction that is salient to understand the emerging decisional practice: the distinction between transaction and non-transaction platforms.[90] In *transaction platforms,* there is an observable transaction between different sides of the platform. The platform offers a service simultaneously to both customer groups, whose participation is indispensable. A hotel booking platform requires both someone wanting an overnight stay and someone willing to rent out a room, a ride hailing platform requires both a passenger and a driver. Conversely, *non-transaction platforms* are characterised by the lack of an observable simultaneous transaction between the market sides. This does not mean no interaction occurs between users on different sides, but merely that the platform does not serve to establish clear, repeated and direct transactions between users on different sides. As a result, it is not possible to charge a per-transaction fee. Advertising-supported media is an example of a non-transaction platform.[91] Viewers of the media are subjected to advertising, but they do not make a purchase or click on that advertising each time it is shown to them, and the frequency of the interaction between the advertisers and the media consumers varies.

The existence of two or more distinct customer groups on a multi-sided platform creates a particular conundrum for the delineation of an antitrust market as required under competition law: does the platform operate on two markets or does each group (each 'side' of the platform)

[88] See DS Evans and R Schmalensee, 'The Industrial Organization of Markets with Two-Sided Platforms' in: DS Evans (ed), *Platform Economics: Essays on Multi-Sided Businesses*, Competition Policy International (online); J-C Rochet and J Tirole, 'Two-Sided Markets: A Progress Report' (2006) 37 *RAND Journal of Economics* 649; M Rysman, 'The Economics of Two-Sided Markets' (2009) 23 *Journal of Economic Perspectives* 125.

[89] DS Evans and MD Noel, 'The Analysis of Mergers that Involve Multi-Sided Platform Businesses' (2008) 4 *Journal of Competition Law and Economics* 663; H Piffaut, 'Platforms – A Call for Data Based Regulation' (2018) 2 *CPI Antitrust Chronicle* 11.

[90] L Filistrucchi, 'A SSNIP Test for Two-Sided Markets: The Case of Media' (2008) NET Institute Working Paper 08-34; L Filistrucchi, D Geradin and E van Damme, 'Identifying Two-Sided Markets' 36(1) *World Competition* 33; L Filistrucchi, D Geradin, E van Damme and P Affeldt, 'Market Definition in Two-Sided Markets: Theory and Practice' (2014) 10 *Journal of Competition Law and Economics* 293.

[91] Filistrucchi, Geradin, van Damme and Affeldt (n 90) 293; Organisation for Economic Co-operation and Development (OECD), 'Two Sided Markets' (2009) Policy Roundtables, DAF/COMP(2009)20, 10.

represent its own, distinct relevant market? Both the definition of a single market for the platform as a whole, and the definition of separate markets for each group, can be criticised. The definition of two separate markets would overlook the link between the groups (in terms of monetisation of the services offered on the platform, and the benefits that arise from the different sides' presence), unless an additional step is incorporated to reintegrate their relationship in the analysis.[92] Traditional tools, such as the SSNIP test, do not account for the relationship between the groups in their current iteration.[93] The definition of a single market, on the other hand, would likely obscure the particular characteristics of each group and the (potentially different) competitive conditions within which their wants are satisfied. If the platform is viewed as a single market, authorities may fail to identify the competitive constraints that undertakings with other monetisation strategies represent for at least one side of the platform. An interested citizen, for example, may find her curiosity satisfied through an online journal which serves ads, yet might also be attracted to an online newspaper which offers articles behind a paywall.

3.2.2 Decisional Practice

Decisional practice and jurisprudence are on their way to resolving the challenges of multi-sided platform market definition, for digital markets or otherwise. To do so, authorities and courts would have to convincingly answer two questions: how many markets should be defined and, in the case of multiple markets, how should the relationship between them be incorporated into the analysis. Naturally, the second question cannot be answered unless the first question is resolved. The number of cases considering multi-sidedness in market definition is steadily increasing. The most notable (though not uncontroversial) advance has been made in cases on payment card systems, with a handful of cases providing preliminary indications for the definition of markets in multi-sided platforms offering digital services. It could be argued that these represent two developing distinct approaches, for transaction and non-transaction platforms respectively. Nonetheless, this distinction appears to overlook the intricacies in the decisional practice for both types of platforms. The Brazilian practice in particular reveals a multi-faceted approach, building on the lessons of the EU and the US cases.

[92] Thépot (n 87) 197; Holzweber (n 87) 567; Robertson (n 1) 137.
[93] For attempts in the scholarship at reconceptualising these tests, see Thépot (n 87); Filistrucchi, Geradin, van Damme and Affeldt (n 90); Holzweber (n 87); Broos and Ramos (n 87).

3.2.2.1 Payment Card Systems

In the EU, US, and Brazil, the most developed multi-sided platform cases pertain to payment card systems. Payment card systems can be characterised as transaction platforms, facilitating a direct and observable transaction between the different customer groups. In the US, the recent *American Express* judgment seemed to evoke a simple approach to transaction platform market definition: they offer a multi-sided product, and thus justify the definition of a single multi-sided market. This could then form the first step in a unified theory for *all* multi-sided platforms, predicated on a distinction between transaction and non-transaction platforms. Yet, as discussed below, the EU and Brazilian authorities had already acquired considerable experience with market definition for payment card platforms before *American Express*. These EU and Brazilian cases involve detailed analysis, but as a result may seem less appealing as precedents in a unified theory of market definition for multi-sided platforms. Nonetheless, they reveal important lessons, also for digital platforms, which should not be dismissed. In the following, we will be slightly anachronistic: setting out lessons of the *American Express* judgment, from 2018, before reviewing the EU and Brazilian payment card cases, which started in the early 2000s.In the US, early payment card cases by the lower courts did touch upon the difficulty in assessing whether to focus the market delineation on the platform as a whole or the distinct sides, debating whether there was a market for the whole 'payment system' platform.[94] Yet it was not until 2018 that the Supreme Court was asked to engage in an in-depth consideration of the issue in *American Express*. This judgment has received widespread attention in the literature because it vocally put multi-sided market definition at the heart of the matter. The arguments in *American Express* came closest to answering the question at issue: how many relevant markets ought to be defined when there is a two-sided platform. It was a nail-biter: with a five-to-four vote, the majority defined a single market for the whole platform, just beating the minority who had wanted to narrow the market to a specific side.[95] This Supreme Court judgment came after a string of discussions on market definition in the lower courts. While the District Court had defined multiple but related levels (issuance, acquirer services, and the network level),[96] the Second Circuit had contended that both sides (issuance for cardholders and acquiring for merchants) needed to be 'collapsed' into a single market.[97]

[94] *National Bancard Corp. v. Visa USA, Inc.* (1984) 596 F. Supp. 1231 (S.D. Fla. 1984), aff'd, 779 F.2d 592 (11th Cir. 1986); *United States v. Visa USA, Inc.* (2001) 163 F. Supp. 2d 322 (S.D.N.Y. 2001), aff'd, 344 F.3d 229 (2d Cir. 2003).
[95] *Ohio et al. v. American Express Co.*, 585 U.S. ___ (2018), 138 S. Ct. 2274, 2280, 2296 (2018).
[96] *United States v. American Express Co.*, 88 F. Supp. 3d 143, 170 (EDNY 2015).
[97] *Ohio et al. v. American Express Co.*, 838 F.3d 179, 196 (2d Cir. 2016); cert. granted, 138 S. Ct. 355 (2017).

Eventually, the Supreme Court agreed with the Second Circuit, maintaining the 'collapsed' market. This was justified, according to the Court, because transaction platforms such as credit card networks offer a 'transaction' product which is jointly consumed by both sides.[98] The platform 'cannot make a sale to one side of the platform without simultaneously making a sale to the other'.[99]

Criticism of the market definition in *American Express* was emphatic: the majority in the Court had, in the words of one commentator, 'introduce[d] economic nonsense into the law and economics of market power'.[100] What the Court had assembled in a market were not substitutes but complements, turning on its head the view of a market as a collection of products in competition with each other.[101] The sensible approach, it was argued, is to define the market around substitutes only (thus likely identifying a market for each side), and subsequently evaluate the impact the relationship between the two sides has on the undertaking's ability to exercise market power.[102] Others sided, almost as vocally, with the majority opinion. The argument that the two sides of a two-sided platform are complements was disputed by economists Evans and Schmalensee: complements are offered to the same customers and might be offered by different firms, they put forward, whereas the two sides of a platform are distinct customer groups who need to be served simultaneously by the same undertaking.[103] Moreover, others argued, a market ought to include more than just demand substitutes.[104]

The ferocity of the debate around the proper way to define the market is unsurprising: through its insistence on market definition, the Court affirmed the tenacious centrality of the relevant market in antitrust cases, indicating that one cannot engage in effects analysis until the market has been defined.[105] The *American Express* judgment's controversial nature arguably was less the result of a controversial market, but more of the subsequent interpretation that the plaintiff had the burden to show net harm on the market as a whole (including both sides).[106]

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[98] *Ohio et al. v. American Express Co.*, 585 U.S. ___ (2018), 138 S. Ct. 2274, 2286 (2018).
[99] *Ohio et al. v. American Express Co.*, 585 U.S. ___ (2018), 138 S. Ct. 2274, 2280 (2018).
[100] H Hovenkamp, 'Platforms and the Rule of Reason: The American Express Case' (2019) 1 *Columbia Business Law Review* 57.
[101] Ibid; J Newman, 'Ohio v. American Express Is the Antitrust Case of the Century – So Why Isn't Anyone Talking About It?' (2018) *Concurrentialiste* <https://leconcurrentialiste.com/ohio-v-american-express/> accessed 31 May 2021.
[102] Hovenkamp (n 100) 59.
[103] D Evans and R Schmalensee, 'Antitrust Analysis of Platform Markets: Why the Supreme Court Got It Right in American Express' (2019) *Competition Policy International* 58.
[104] G Manne in G Manne and T Wu, 'Ohio v American Express' (2019) 7 *Journal of Antitrust Enforcement* 106.
[105] E Katz, 'Not So Fast, You Still Have to Define the Relevant Market: The Less Debated Yet Vital Teaching of Ohio v. American Express' (June 2019) *CPI Antitrust Chronicle*.
[106] D Carlton, 'The Anticompetitive Effects Of Vertical Most-Favored-Nation Restraints And The Error Of Amex' Case' (2019) 1 *Columbia Business Law Review* 102.

If the positive effects on one side outweigh the positive effects on the other side, this procedural perspective on effects analysis makes it difficult for the plaintiff to make a convincing case.

The question of market definition is relevant to an even more recent Supreme Court decision, too, where the Court had to decide on the plaintiffs' standing to sue under *Illinois Brick*.[107] In *Apple v. Pepper*,[108] the Supreme Court held that iPhone owners are direct purchasers of apps in the Apple app store and therefore have standing to sue Apple. Although the decision does not engage in a definition of the market, one could cautiously interpret *Apple v. Pepper* as taking a view on the nature of the market which diverges from the landmark judgment in *American Express*. The Supreme Court arguably sees Apple's app store as the last level in the distribution chain for apps (option 1), rather than as a platform in which developers interact with consumers to distribute their apps (option 2). Ultimately, both views of the market are likely to have led to the same outcome on this particular procedural question – iPhone owners have standing as direct customers of Apple – but based on a different product. If option 1 is adopted, iPhone owners obtain apps from Apple as a product, while under option 2, it is the facilitation of the interaction with developers that is consumed by iPhone owners. Option 2 would in essence portray the Apple app store as a transaction platform,[109] to which the *American Express* market precedent could apply.

Leaving aside the discussion of standing and effects, defining a single market encompassing all sides has important consequences for the products which could be considered to compete with the platform. As the Supreme Court argued, only other two-sided transaction platforms would effectively constrain the transaction platform.[110] Thus, the space in which the firm competes (and in which anti-competitive effects are usually analysed) is defined quite narrowly.

As a contrast, the following analysis reveals how the EU and Brazilian decisional practice on payment cards did not adopt a simple 'one multi-sided market'-approach. Instead, they define multiple layers of interrelated markets, some of which are one-sided and some multi-sided.

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[107] *Illinois Brick Inc. v. Illinois* (1977) 431 U.S. 720.
[108] *Apple Inc. v. Pepper et al.*, 587 U.S. ___ (2019), 139 S. Ct. 1514 (2019).
[109] See recent statements to that effect in the ongoing case *Epic Games, Inc. v. Apple Inc.*: written direct testimony of Richard Schmalensee, PhD, p 6.
[110] *Ohio et al. v. American Express Co.*, 585 U.S. ___ (2018), 138 S. Ct. 2274, 2287 (2018). Based on this analysis, a US district court made the controversial finding that, as a matter of law, a two-sided platform could not compete with a company that only operates on one of the market sides; *U.S. v. Sabre*, 452 F. Supp. 3d 97 (D. Del. 2020).

European Union and Brazil

The European Commission has had its fair share of payment card cases over the years, considering various elements in the operation of a credit card system, including the fees set, and rules which prohibit merchants from giving discounts to consumers who use other means of payment. The cases are complex and, in order to distil general lessons, abstraction is made of much of this complexity. Nonetheless, the complexity of the cases can also be seen in the markets adopted: where multiple practices are examined and the harm impacts multiple actors, this already shows in the market definition.

In the early 2000s, the Commission distinguished the payment systems/networks from card-related activities (issuing and acquiring services by banks). It linked these two markets together in a vertical or 'intra-system' relationship: the banks would offer their 'downstream' card-related services within a particular payment system, the 'upstream' or 'network' market.[111] It eventually left much of its market definition open, not feeling the need to assess whether other means of payment competed with credit cards or whether there was a distinction between cards, because it did not believe Visa's practices appreciably restricted competition under any definition of the market.[112] It is notable that the Commission believed that the anti-steering rule, which prohibited merchants from steering consumers to other cards, would have but a marginal impact on the pricing of consumer goods,[113] because a similar question would be raised in the US over a decade later in *American Express*.

The Commission and the EU Courts further considered multi-sided market definition for payment cards in *Cartes bancaires* and *MasterCard*. The Commission's decisions in *Cartes bancaires* and *MasterCard* of 2007 followed each other within the space of three months, and a judgment on both cases was rendered by the European Court of Justice[114] on the same day in 2014. The cases predominantly concerned the fees charged within the system, which were claimed to restrict competition between existing acquiring or issuing banks and to limit entry by other financial institutions. In both cases, the Commission and the General Court indicated the possibility of multiple market definitions: both multi-sided platform markets and one-sided markets. The different sides of the payment platform could constitute distinct markets, yet the

[111] Commission Decision COMP/29.373, *Visa International* (2001), para 34.
[112] Ibid, para 42.
[113] Ibid, para 43.
[114] European Commission decisions can be appealed to the General Court, whose judgments, in turn, can be brought to the European Court of Justice on points of law; Article 256 TFEU.

payment system itself could form a market of its own.[115] Competition occurred upstream between payment systems (of different card brands), as well as downstream between financial institutions in distinct acquiring and issuing markets. The Commission ultimately chose the market which it considered the best fit for the alleged anti-competitive conduct and effects: it focused on one-sided issuing or acquiring services markets. This market definition was confirmed by the General Court.[116]

In both cases, the multi-sided nature of the payment card systems and the ultimate market definition created intense debate. The Commission was not convinced by MasterCard's argument that the existence of a joint 'payments' product justified the definition of a single multi-sided market for the payment card system.[117] The Commission argued that the 'payments' product was not the only product, since there were also acquiring and issuance services.[118] In fact, it was really those latter products which mattered, since the case concerned 'restrictions to competition *within* payment card systems'[119] rather than between them.

When the market definition arguments came before the Court of Justice in *Cartes bancaires*, the Court reproved the General Court for a lack of attention to the economic context of the case, in particular the multi-sidedness of the platform,[120] but this did not induce the General Court to change its market definition upon remand. The General Court felt it was still possible to define distinct one-sided markets as long as the interdependency between the markets was recognised in the effects analysis.[121]

It appears that in these cases, the European Commission recognised the possibility of a multi-sided market (though it did not fully accept the 'joint product' argument put forward by the firms) *as well as* multiple one-sided markets. The EU approach is characterised by a willingness to define all areas of competition (all products and constraints) as potential markets and then proceed only with those which are relevant to the alleged harm to competition. This

[115] Case T-491/07, *Groupement des Cartes Bancaires v. European Commission* (2007) ECLI:EU:T:2012:633, para 180; Commission Decision COMP/34.579, *Mastercard* (2007), para 257; Commission Decision AT.39.398, *Visa Inter-regional MIFs* (2019), para 12.
[116] Case T-491/07, *Groupement des Cartes Bancaires v. European Commission* (2007) ECLI:EU:T:2012:633, paras 82, 162, 178.
[117] Commission Decision COMP/34.579, *Mastercard* (2007), para 251.
[118] Ibid, para 259.
[119] Ibid, para 261.
[120] Case C-67/13 P, *Groupement des Cartes Bancaires v. European Commission* (2014) ECLI:EU:C:2014:2204, paras 77–81.
[121] Case T-491/07 RENV, *Groupement des Cartes Bancaires v. European Commisison* (2016) ECLI:EU:T:2016:379, paras 77–82. Also note a recent preliminary ruling, where the Court of Justice accepted 'three distinct markets in the field of open bank card systems': an inter-systems market, an issuing market, and an acquiring market, all of which were connected; Case C-228/18 *Budapest Bank* (2020) ECLI:EU:C:2020:265, para 56.

may mean that the analysis centres only on one 'side' of a payment system, where it is competition between the members of that side which is harmed. The interrelatedness of different sides may matter for the effects analysis, but does not automatically require the definition of a single multi-sided market.

Like its EU counterpart, CADE has dealt with its share of payment card cases. In decisions involving *Visa-Visanet*[122], *Itaú/Credicard*[123], *Elo*[124] and *Stelo*[125], it defined distinct but related markets for issuance and acquiring services. In *Visa-Visanet*, concerning an exclusivity agreement between Visa and the then largest acquirer of merchant transactions, CADE focused its competitive assessment on the market for card-acquiring services rendered to merchants.[126] In *Itaú/Credicard*, CADE defined a market for 'credit cards'. In its analysis, it noted the existence of multiple agents in credit card chain, from cardholder/buyer and its issuer/bank, to seller and accrediting bank, and ultimately the credit card brand owner. In its assessment, it defined this 'credit card' market as a broad credit card *issuance* market, which included multiple brands and was distinct from other methods of providing credit to individuals.[127] The *Elo* proceedings are particularly interesting because they reveal that CADE, in a manner not entirely unlike the European Commission, acknowledges multiple levels in payment card systems, which could each form their own market. In this case, the Superintendent referred to the two-sidedness of the payment system to define not only two distinct relevant markets for issuance and acquiring services, but also to note the network effects generated by the system.[128] The decision recognised that there are not merely different product markets but also different levels on transaction platforms: the two sides, and the system itself. Again like the European Commission, CADE focused on the market which it deemed relevant for the assessment of the conduct in the particular case.

[122] Case n.08700.003240/2009-27, *Visa International Service Association e Visa do Brasil Empreendimentos Ltda*. (2010) DOU:01/29/2010.
[123] Case n.08700.006328/2013-87, *Itaú Unibanco S.A., Banco Citibank, Banco Citicard S.A. and Citifinancial Promotora de Negócios e Cobranças* (2013) DOU 21/08/2013.
[124] Case n.08012.000332/2011-28, *Banco do Brasil S.A., Banco Bradesco S.A. e Caixa Econômica Federal* (2011) DOU 07/12/2011; Case n.08700.000018/2015-11 & n.08700.003614/2017-14, *Elo Serviços e Elo Participações S.A.* (2017) DOU 04/07/2017.
[125] Case n.08700.004504/2014-27, *Companhia Brasileira de Soluções e Serviços, Cielo S.A. and Stelo S.A.* (2014) DOU: 10/01/2014.
[126] Case n.08700.003240/2009-27, *Visa International Service Association e Visa do Brasil Empreendimentos Ltda* (2010) Proposta de celebração de termo de compromisso de cessação, voto relator Olavo Zago Chinaglio para 38.
[127] Case n.08700.006328/2013-87, *Itaú Unibanco S.A., Banco Citibank, Banco Citicard S.A. and Citifinancial Promotora de Negócios e Cobranças* (2013) Superintendência-Geral Análise Antitrust 2, paras 24–28.
[128] Case n.08700.000018/2015-11, Nota Técnica nº10, paras 17–27; n.08700.003614/2017-14, *Elo Participações S.A. e Elo Serviços S.A.* (2017).

Having reviewed cases in the US, on the one hand, and the EU and Brazil, on the other, it may appear as if the first has a distinct approach. After all, in *American Express*, a single market was defined for the whole platform, while in the EU and Brazilian cases, the system as well as the different sides were considered viable markets. It is worth noting, however, that the business model of American Express differs from those of Visa and MasterCard. It operates a closed-loop model, directly issuing cards to cardholders and directly processing payment transactions for merchants. Visa and MasterCard, meanwhile, operate open-loop models in which financial institutions operate as issuers and acquirers.[129] You could say that American Express is the simplest example of a transaction platform, where the platform owner facilitates a transaction between two distinct customer groups (cardholders, merchants). In Visa and MasterCard's systems, there is an additional layer of actors. Competitive relationships will evidently differ depending on the model chosen. Correspondingly, the alleged practices and anti-competitive harm also differed between the US case, on the one hand, and the EU and Brazilian cases, on the other. While in *American Express* the practice was alleged to inhibit entry by other card networks in inter-system competition, in *Cartes bancaires, Visanet* and other cases the concern was restrictions of competition within that payment system, by limiting the entry of other financial institutions wishing to offer issuing and acquiring services.

Even if a 'transaction product' approach were adopted, this still leaves unresolved how many markets to define in the case of non-transaction platforms. Many digital services can conceivably be characterised as non-transaction platforms. Thus, the next section will review the decisional practice for digital services, before combining the lessons from payment cards and digital services in section 3.2.2.3.

3.2.2.2 Digital Services Platforms

Arguably, the payment card judgments only provide guidance for transaction platform cases, or perhaps even only for other *payment* transaction platforms. For instance, digital platforms facilitating a transaction between market sides, such as ride hailing platforms or hotel booking platforms, could rely on an analogy to payment transaction platforms. However, non-transaction platforms in the digital sphere – such as online search or social networking – that do not facilitate a transaction between market sides but nevertheless internalise important network effects between them, may be a different kind of animal. Thus, decisions which

[129] Trefis Team, 'How American Express Gains A Competitive Advantage From Its Closed-Loop Network' *Forbes.com* (13 March 2014) <https://www.forbes.com/sites/greatspeculations/2014/03/13/how-american-express-gains-a-competitive-advantage-from-its-closed-loop-network/> accessed 31 May 2021.

explicitly concern digital services such as search, social networking or messaging would be much more valuable sources of guidance.

United States

A few years before the *American Express* judgment, the FTC investigated Google, responding to complaints about search bias. The claim was that 'Google unfairly preferences its own content on the Google search results page and selectively demotes its competitors' content from those results'.[130] Although the FTC decided to close its investigation, considering on balance that the integration of vertical search into Google's horizontal search engine benefitted consumers, a memorandum by FTC staff provides some insight into the market definition contemplated at the time. FTC staff defined three distinct markets, corresponding to different sides of the Google Search platform: a (horizontal) search market, a search advertising market, and a search intermediation market.[131] They considered that the search and advertising sides were distinct though 'interdependent markets,[132] and individually assessed substitution for each side. On the search side, FTC staff did not seem entirely certain as to whether horizontal search had to be distinguished from vertical search, but on the whole considered them not to be significant substitutes.[133] They *did* consider the advertising side, however, in establishing that the SSNIP applied to individual or groups of keywords, because advertising is sold per keyword.[134] Horizontal search and vertical search were not considered to be substitutes, but did share a relationship of complementarity and integration[135] – something which CADE would note in its own *Google Shopping* case.

On the advertising side, FTC staff considered whether search advertising competed with other types of advertising, concluding it did not significantly do so.[136] The FTC economists focused their attention on the 'search advertising market', emphasising the two-sided nature of the platform.[137] They seemed to consider that only other platforms could be competitors. For the most part, these were other search platforms, yet the memorandum at some point also includes Facebook, a social network platform which offers advertising services.[138]

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[130] Federal Trade Commission, File Number 111-0163, *In the Matter of Google Inc*. (2012) Statement of the Federal Trade Commission Regarding Google's Search Practices, 1.
[131] Federal Trade Commission, File Number 111-0163, *In the Matter of Google Inc*. (2012) Staff Memorandum 64–73.
[132] Ibid 72.
[133] Ibid 66.
[134] Ibid 65.
[135] Ibid 94.
[136] Ibid 70–73.
[137] Federal Trade Commission, File Number 111-0163, *In the Matter of Google Inc*. (2012) Economists' Memorandum, 7.
[138] Ibid 6–8.

Most recently, the dismissal of the FTC's monopolisation complaint against Facebook showcased the need for further clarification in this regard: Judge Boasberg was not convinced by the FTC's market definition involving the social media giant, highlighting how 'this case involves no ordinary or intuitive market'.[139] The judge asked the FTC to provide more detail on how it arrived at its market for personal social networking services, and the particular metric it used to arrive at Facebook's market share on that market. He also alluded to the functionalities involved in social media.[140] The FTC can now file an amended complaint.

European Union

The fully developed European Commission decisions in *Facebook/WhatsApp, Microsoft/LinkedIn,* and *Google Search (Shopping)* are contenders for more in-depth guidance on digital market definition. In both the *Facebook/WhatsApp* and *Microsoft/LinkedIn* different market sides were considered to be distinct markets. However, it is unclear whether or not the Commission made an informed and conscious decision to take a multiple markets approach in light of the non-transaction type of multi-sided platforms before it.

In 2014, the European Commission approved the acquisition of WhatsApp by Facebook.[141] When assessing the potential effects of the agreement, it defined separate markets for consumer communication services, social network services and online advertising services.[142] These last two markets are interesting because they correspond to the two traditional sides of social network platforms. These platforms are often ad-supported, exhibiting at a minimum unilateral network effects: advertisers want to be on a platform which has a significant number of users on the other side to serve as their audience. There may not be a simultaneous transaction between the two sides, but the advertisers do need an audience. It is true, as well, that users might have to pay (more) for the service in the absence of the advertisers and thus benefit from their presence. Unfortunately, the Commission did not discuss cross-platform network effects for social network services, or draw a distinction between transaction and non-transaction platforms.[143] It merely defined distinct markets for the market sides, without an analysis of the multi-sided nature of these services.

In 2016, the European Commission conditionally approved the acquisition of LinkedIn by Microsoft.[144] Although many final definitions were left unresolved because they were

[139] *FTC v Facebook*, Civil Action No. 20-3590 (JEB), Memorandum Opinion dated 28 June 2021, pp 2, 21 ff.
[140] Ibid.
[141] Commission Decision COMP/M.7217, *Facebook/WhatsApp* (2014) C(2014) 7239.
[142] Ibid, paras 13, 45, 69.
[143] Commission Decision COMP/M.7217, *Facebook/WhatsApp* (2014) C(2014) 7239, para 127.
[144] Commission Decision COMP/M.8124, *Microsoft/LinkedIn* (2016) C(2016) 388.

irrelevant to the decision, the European Commission identified multiple markets in which the two companies were active. Many of these markets actually represent different sides of the same platform(s). The European Commission acknowledged this multi-sidedness,[145] even touching upon the impact on competition of the within-group and cross-platform network effects of LinkedIn's professional social network.[146] It did not, however, explicitly link the market definition to multi-sided market theory or the type of platform involved. In both the *Facebook/WhatsApp* and *Microsoft/LinkedIn* decisions, the Commission considered different market sides as distinct markets, yet it did not explain whether its rationale for doing so was rooted in a consideration of cross-platform network effects, the independent demand of each side, or the distinction between transaction and non-transaction platforms.

In its *Google Search (Shopping)* decision of 2017, the European Commission fined Google for abusing its dominant position.[147] In that case, the Commission did not explicitly set out how markets should be defined for digital services platforms, yet appeared to prefer the definition of one-sided markets. It focused its market definition on the search side, without proceeding to assess the advertising side, even though it did acknowledge its relevance in monetising the services.[148] Despite this lack of explicit consideration, the nature of the platform did seem to be on the Commission's mind: it recognised that offering distinct sides together on one platform may be 'an advantageous commercial *strategy*',[149] thus implying that multi-sidedness may not be inherent in all the products offered on the platform. This could be interpreted as a first step in a recognition that the demand served by a non-transaction platform is distinct from that served by transaction platforms: the presence of the other market side is not inherent in the service provided. However, the Commission did not seize upon this opportunity to set out its view on the distinction between transaction and non-transaction platforms. It proceeded to assess the substitution on the search side, distinguishing a relevant market for general search services (horizontal search) and comparison shopping services (vertical search).[150] The Commission may not have provided explicit guidance on market definition in its decision, but its assessment of the market would be considered by CADE in the Brazilian *Google Shopping* case.

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[145] Ibid, para 87.
[146] Ibid, paras 341–345, 366.
[147] Commission Decision AT.39740, *Google Search (Shopping)* (2017) C(2017) 4444; on appeal as Case T-612/17 *Google and Alphabet v. Commission*.
[148] See description of the functionalities of search, search advertising, and comparison shopping at ibid, paras 8-26.
[149] Ibid, para 159 (emphasis added); see also para 226.
[150] Ibid, paras 191–250. The assessment of search is similar in Commission Decision AT.40099 *Google Android* (2018) C(2018) 4761.

Brazil

CADE has repeatedly recognised the existence of two-sided platforms, and the importance of the link between the sides in considering the business model and the relevant market affected.[151] In cases concerning search products and advertising, CADE has referred to the two-sided character of these markets.[152] CADE specifically considered the importance of the relationship between the two sides of the market when identifying the product the companies offered: for example, sponsored search was deemed to form a distinct market because it could be expressly tailored to the interests of the search users, thus distinguishing it from other types of advertising or marketing products.[153]

CADE had a further chance to reflect on market definition for multi-sided, non-transaction platforms in its own *Google Shopping* case.[154] In this case, it looked at both the US and EU approach in their respective *Google Shopping* investigations, and formulated an intricate analysis. CADE referred to the two-sidedness of Google's search engine and its comparison shopping service, with various of its Commissioners touching upon both sides in their votes.[155] The case also included a reflection upon the distinction between transaction and non-transaction platforms, found both in the vote by Commissioner Bandeira Maia and in the technical note by the Department for Economic Studies (DEE). They noted the non-transaction nature of Google's platform, where the presence of one side was not essential to the service provided to the other side.[156] They also quoted an OECD report which stated that the advertising side of a platform like Google's was not part of the product.[157] Yet, ultimately neither the Commissioner nor DEE clearly stated that the distinction between transaction and non-transaction platforms was the determining factor for the number of markets to be defined. In the end, distinct markets were defined for each side, with, in the words of Commissioner

[151] In 2017, CADE recommended conditional approval of the acquisition by Itaú Unibanco Holding of a stake in the brokerage firm XP Investments. XP adopted a 'disruptive' business model, operating a platform hosting a variety of products from different suppliers. CADE noted the nature of the platform as a two-sided platform bringing together various providers with final consumers; Case 08700.004431/2017-16, Parecer Técnico n.º 24 Superintendência-Geral (27 December 2017), para 22.

[152] Processo Administrativo 08700.005694/2013-19, *Microsoft/Google Inc*; Processo Administrativo 08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil*.

[153] Processo Administrativo 08012.006419/2009-94, *Microsoft e Yahoo Inc.* (2009) coordenação-geral de análise antitruste 01, para 8.

[154] Processo Administrativo 08012.010483/2011-94, *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil*.

[155] Processo Administrativo 08012.010483/2011-94, *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) procedimento administrativo para 8; voto-vogal Polyanna Ferreira Silva Vilanova, para 43; voto Oscar Bandeira Maia, para 109; voto João Paulo de Resende, para 7.

[156] Processo Administrativo n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil*, voto Bandeira Maia, paras 109-114, 115-130, Nota Technica 34/2018/DEE/CADE p.23.

[157] Case n.08012.010483/2011-94 E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil Nota Technica 34/2018/DEE/CADE p.25.

Bandeira Maia, no in-depth engagement with the 'endless controversies' in 'free digital platforms with multiple sides'.[158]

Substitution was assessed separately for both the user side and the advertising side, though they were mindful of the interdependence with the other side when assessing effects.[159] The Superintendent and the DEE emphasised that the market definition was meant to aid competitive analysis and did not have to be set in stone. Indeed, it may not matter whether a single multi-sided market could be defined or multiple one-sided markets, as long as the competitive effects could be properly assessed. Thus, they adopted these definitions to help with the assessment of the case and could be relatively flexible with them. This is also why the exact extent of substitution on the advertising side – including the question whether there was competitive pressure from social networks such as Facebook – could be left open.[160] The assessment of substitution *within* the user side was interesting: the DEE considered that there was an upstream market for generic search and a vertically related downstream market for price comparison (vertical search). This 'verticalisation', noted the DEE, happens only on the user side. Both the upstream and the downstream level on the user side are two-sided, sharing an advertising side.[161] Thus, the decision adopted a certain layering, where the relationships between two sides (making up two distinct markets) could occur at several levels.

3.2.2.3 Lessons from decisional practice

Decisional practice has not yet achieved a single consensus on the right theoretical framework for (digital) multi-sided market definition, but common threads can be identified. While the decisional practice on digital services is still developing, it teaches us something about the potential onwards trajectory for multi-sided digital market definition, in particular when contrasted with the payment card cases. It seems that a distinction is emerging between transaction platforms – for which a single 'collapsed' market could be defined – and non-transaction platforms, which are more likely to be seen as gathering several relevant markets. Indeed, in the UK, the national competition authority referred to the distinction between transaction and non-transaction platforms in its *Just Eat/Hungryhouse* merger decision. To determine whether separate markets should be defined for each side, it argued, it is necessary

[158] Ibid, para 134 (own translation).
[159] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil*, Superintendência-Geral Análise antitruste 2, paras 182, 198.
[160] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil*, Nota Technica 34/2018/DEE/CADE, 41.
[161] Ibid 40.

to distinguish between transaction and non-transaction platforms. Where a platform does not 'facilitate a transaction between each side of the market', the company may be facing different competitive constraints on each side, justifying the delineation of distinct relevant markets.[162] Despite being drawn in a decision under the national law of a (then) Member State, rather than a decision under EU law, this express distinction may indicate some appetite for the creation of a unified theory on multi-sided market definition, predicated on the distinction between transaction and non-transaction platforms. Crucially, the question would be whether a 'transaction product' is offered which requires a simultaneous offer to both sides, or whether the demands of the different customer groups are distinct and could potentially be satisfied in isolation. In the former situation, the definition of a single market would be favoured, while in the latter situation, several markets would be defined.

Despite the attractiveness of such a simple distinction, the decisional practice is more nuanced than this. We have seen that this distinction may only work for simple transaction platforms, such as that of *American Express*, or in situations in which the competitive issue occurs only at the level of the system. Where competition occurs between actors within the system, the EU and Brazilian approach is to delineate market sides as separate relevant markets. Referring to this decisional practice, Pereira Neto and Lancieri argued for a 'layered' market definition for transaction platforms depending on the competitive constraints and the strength of network effects that affect a given platform market (side) – thereby capturing the specific competitive situation that presents itself at the level of the various market sides or the platform level. In their proposal, the starting point would be the definition of markets for each side, to be expanded to include other sides only if this reflects competitive constraints.[163] Although this layering is a proposal for transaction platforms, it could be argued that the layering logic reflects the decisional practice for both transaction and non-transaction platforms in the EU and, notably, in Brazil. If one combines the lessons of decisional practice in both payment card and digital services cases, a layering pattern does indeed emerge in which multiple competitive relationships are identified. The Brazilian *Google Shopping* case, which brought together lessons from all jurisdictions, exemplifies this.

Multi-sided market definition has not yet reached a stage of consensus, but we can see indications that a coherent framework may not be very far off. In this area, where decisional

[162] United Kingdom Competition and Markets Authority (CMA), *Just Eat/Hungryhouse*, final report (16 November 2017), para 4.11.
[163] CMS Pereira Neto and FM Lancieri, 'Towards a Layered Approach to Relevant Markets in Multi-sided Transaction Platforms' (2020) 83 *ALJ* 429.

practice is currently the most active, there is therefore the most potential for cross-fertilization across the three jurisdictions.

3.3 The Future: Digital Ecosystems

The rise of comprehensive digital ecosystems is increasingly coming into the focus of antitrust law and, indeed, antitrust market definition. In the foreseeable future, digital market definition will need to develop tools to capture digital ecosystems in order to provide a useful basis for the substantive antitrust analysis. In this development, insights from the experience gathered in the delineation of zero-price services and multi-sided markets can be useful guideposts.

Digital ecosystems are being held together by a powerful ecosystem orchestrator that links a multitude of products and actors. While multi-sided platforms such as the ones discussed in the previous section frequently form part of a larger digital ecosystem, these are distinct organizational forms.[164] So how can digital ecosystems be captured with a tool like antitrust market definition? While there is not much case law to rely on in order to answer this question, it is possible to draw analogies that can be harnessed for this purpose. In addition, a cross-jurisdictional exchange amongst competition authorities and courts would appear particularly well-suited in order to tackle an emerging issue of this magnitude.

The European Commission's Special Adviser Report observed that companies are 'draw[ing] consumers into more or less comprehensive ecosystems' which may need to be analysed separately and/or alongside markets for specific products.[165] Indeed, many digital platforms attract consumers because they offer multiple products in the same place: the convenience of a smartphone, a mobile operating system, a search app, an email service, a browser, a streaming service and a cloud service all in one place. These products may be complementary or may be related merely by the underlying technology or business model of the company.[166] This description of ecosystems bears a striking resemblance to the questions of integration which arose in new technology tying cases in the 2000s or even to the one-stop-shop or 'cluster market' arguments of the 1960s.[167]

The cluster market arguments find their origin in US cases concerning banking services, security systems, supermarkets and other types of businesses offering 'one-stop-shop'

[164] MG Jacobides and I Lianos, 'Ecosystems and Competition Law in Theory and Practice' (2021) CLES Research Paper Series 1/2021, 6.
[165] J Crémer, Y-A de Montjoye and H Schweitzer, 'Competition Policy for the Digital Era' (Report for the European Commission) (2019) 4, 48.
[166] Ibid 33 refer to 'an ensemble of services, some complementary, connected to another through private APIs which are APIs accessible only to services from the same ecosystem'.
[167] Arguments based on Eben (n 56).

experiences. A cluster market exists when companies compete, not on individual products, but on a group of products taken jointly. Thus, the relevant market can be defined for the cluster as a whole, which likely only competes with other clusters that are composed of similar services. The interchangeability thus relates to the cluster, rather than to the individual services in it. This 'cluster market definition' was validated by the US Supreme Court in *Philadelphia National Bank*[168] (commercial banking), *Grinnell*[169] (alarm systems) and *Phillipsburg National Bank and Trust*[170] (commercial banking). Several services were grouped together because they were considered, as a group, to be insulated from competition from the constituent products due to cost advantages, settled consumer preference or a single use.[171] The Supreme Court held that 'there is no barrier to combining in a single market a number of different products or services where the combination reflects commercial realities',[172] even if the products are not technically interchangeable, where the group reflects a single use or basic service.[173] If this is the case, companies need to offer all or nearly all items in order to compete at the same level, because most customers will want to use the different items in combination.[174] The cluster, therefore, has an economic significance beyond the individual products or services which it contains.[175]

The cluster market idea remains alive, if not kicking, with references to its existence in an amicus curiae brief in the *American Express* case.[176] In the EU, the Commission has referred to banking cluster markets[177] and to similar ideas of 'one-stop-shopping' in supermarket cases.[178] In Brazil, banking services have also been conceptualized as cluster markets on occasion.[179] Unfortunately, no consensus emerged as to the criteria and methods for defining

[168] *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963).
[169] *United States v. Grinnell Corp.*, 384 U.S. 563 (1966).
[170] *United States v. Phillipsburg National Bank and Trust Co.*, 399 U.S. 350 (1970).
[171] *United States v. Philadelphia National Bank*, 374 U.S. 321, 356–357 (1963); *United States v. Grinnell Corp.*, 384 U.S. 563, 564 (1966).
[172] *United States v. Grinnell Corp.*, 384 U.S. 563, 564 (1966).
[173] Ibid, 572.
[174] Ibid, 572–573.
[175] *United States v. Phillipsburg National Bank and Trust Co.*, 399 U.S. 350, 360–362 (1970).
[176] Brief for the AAI in *Ohio et al. v. American Express Co.* (2018) 22.
[177] Joined Cases C-125, C-133, C-135 and C-137/07 P *Raiffeisen Zentralbank Österreich and Others v Commission (Lombard Club)* EU:C:2009:576
[178] Commission Decision IV/M.1221, *Rewe/Meinl* (1999) C(1999) 228, para 13; Commission Decision COMP/M.1684, *Carrefour/Promodes* (2000) D/100083, para 10; Commission Decision COMP/M.4590, *Rewe/Delvita* (2007) D/202530, para 12.
[179] See Processo Administrativo n.08012.010081/2007-11 *Banco Santander Central Hispano S/A, Fortis N.V, Fortis S.A./N.V, The Royal Bank of Scotland Plc*; Processo Administrativo n.08012.011736/2008-41 *Banco Nossa Caixa S.A. (BNC) and Banco do Brasil S.A. (BB)*. On this, see also CADE, 'Mercado de instrumentos de pagamento' (October 2019) 40–41 <https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/cadernos-do-cade/mercado-de-instrumentos-de-pagamento-2019.pdf> accessed 31 May 2021.

cluster markets: neither for the establishment of a certain product within the cluster as a focal product, nor for the subsequent identification of substitutes. The cluster market cases are not only marked by a diversity of industries, but also a diversity of criteria used to establish the validity of the cluster approach because different products are related in some way.

The complexity of ecosystem competition cannot well be captured by the cluster market concept, although the latter can serve as a stimulus for delineating complex markets. An ecosystem goes beyond the mere curation of a set of products to the convenience of customers. It establishes (technical and other) links between products, which may have multiple customer groups, as well as creating links between different economic actors who may tap into the ecosystem. Ecosystems do not only comprise multiple products, but usually also multiple actors.[180] Ecosystems may also involve a degree of business model competition, as firms strive to put their revenue-generating product at the heart of the ecosystem.[181] This can, for instance, be observed in Google's multiple strategies to ensure its search engine remains the de facto standard.

The Special Adviser Report refers to the integration of new products and devices into the ecosystem of a particular company, and the anti- and pro-competitive effects which may flow from this integration.[182] This discussion on integrated products itself is not new. Specifically in tying cases, companies have raised the argument that the linking together of several products through technology may create a whole new product, and thus a new relevant market, distinct from products which have not been integrated in this manner.[183] This argument has slowly gained traction in the lower courts in the US, who consider that if the integration of two functionalities – corresponding to otherwise distinct products – enhances the offer by providing the functionality that customers prefer, the combination forms a package of technologically integrated components which is the subject of a distinct demand.[184] Though this reasoning was adopted as part of the analysis on the existence of distinct products for the purpose of an

[180] Stigler Committee on Digital Platforms, 'Final Report' (September 2019) 89 <https://www.chicagobooth.edu/research/stigler/news-and-media/committee-on-digital-platforms-final-report> accessed 31 May 2021; Jacobides and Lianos (n 164) 7.

[181] See D Crane, 'Ecosystems Competition' (2020) Note for the OECD Hearing on Competition Economics of Digital Ecosystems, DAF/COMP/WD(2020)67; see also M Iansiti and R Levien, *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability* (2004 Harvard Business School Press).

[182] Crémer, de Montjoye and Schweitzer (n 165) 13, 117, 125.

[183] In the EU: Case T-201/04 *Microsoft v. Commission*, [2007] ECR II-3601, para 921; in the US: *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984) para 29.

[184] E.g. in *Innovation Data Processing v. International Business Machines*, 585 F. Supp. 1470 (D.N.J. 1984); *United States v. Microsoft Corp.*, 980 F. Supp. 537 (D.D.C. 1997); *Caldera, Inc. v. Microsoft Corp.*, 72 F. Supp. 2d 1295 (D. Utah 1999).

unlawful tie, the underlying question is similar to that in market definition: does the combination of products satisfy a demand which cannot be satisfied (as efficiently) by the individual products on their own.

In the Brazilian *Google Shopping* case, the Superintendent warned that adopting too narrow a market definition could risk 'ignoring the existence of relevant competitive constraints from agents that are not perfect substitutes for the products involved'.[185] A solution to this conundrum would in fact be to view layers of competition and relevant markets that are (partially) competing with each other, albeit not in the straightforward manner that market definition likes to rely upon. In that same case, the Superintendent also referred to the integration arguments developed in tying cases when analysing the product market. It considered an argument made by Google, that the logic of the US cases could be transferred to this context, to establish that general search and the vertical shopping search service formed part of one integrated package. Ultimately, it dismissed this contention on the facts of the case, because it was not convinced that these two services satisfied the same demand.[186] In *Google Android*, the European Commission was faced with a similar argument by the company, though it was not framed explicitly around integration, that Google offered a 'mobile platform system' including both an app store and a smart mobile operating system. The Commission rejected this assertion by reference to the distinct user needs that app stores and operating systems satisfy, and based on the existence of independent providers for each of these products. At the same time, the Commission did mention that the app stores and mobile operating systems were components of 'the smart mobile device', thus (perhaps unintentionally) raising the spectre of a potential integration argument for the device rather than for the mobile platform.[187] Unlike CADE, the European Commission did not clearly make the link between the system argument put forward by Google and the integration arguments seen in tying cases.

The logic of cluster markets and integration could serve as guidance for the definition of ecosystem markets: they share a common logic of demand for a group of goods or services. The next step would be to determine whether the group as a whole is the sole market, or whether individual components might also form relevant markets pertinent to a case. Here, market definition for aftermarkets might provide some valuable guidance for the question of market

[185] Processo Administrativo 08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) Superintendência-Geral Análise antitruste 2, para 125.
[186] Processo Administrativo 08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) Superintendência-Geral Análise antitruste 1, paras 128–133; Análise antitruste 2, paras 137–140.
[187] Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761, paras 296–299.

definition for digital ecosystems, as well as for the multi-sided platforms that these ecosystems are often composed of.[188] The idea is to frame the different levels at which competition can occur as different levels for market definition purposes: e.g., the meta-level of the ecosystem, the platform as the primary level, or the level of an individual digital service as the secondary level.[189] Where these different levels of competition can be identified, we can better understand the competitive constraints that may (or may not) be at work at a particular level.[190]

In *Google Android*, the European Commission seemingly considered different levels of products and markets, though its analysis was not coherent enough to provide incontrovertible guidance. It described an 'Android ecosystem' with Android-specific components (such as the app store and services enabling apps to work on the operating system) which could rely on customer loyalty,[191] while at the same time defining separate markets for components of that ecosystem, such as Android app stores.[192] This is somewhat reminiscent of its *Amazon e-books* commitment decision, where it referred to a Kindle ecosystem in which customers were 'locked in', albeit without making a conscious link with the e-books markets it had defined.[193] These reflections in the decisional practice indicate an opportunity for multi-level market definition: an overall ecosystem level, as well as distinct product markets which depend on the ecosystem but to some extent also compete with offers from outside the ecosystem. This type of approach to market definition, of course, will not be able to produce a relevant market on which market shares can be easily calculated, and calls for a new way of relying on the relevant market.[194]

While the case law has already started to explore an appropriate methodology for taking zero-price services into account and for delineating multi-sided platforms, the issue of digital ecosystems is still in its infancy. Nonetheless, some lessons can be derived from the cluster markets and technological integration reasoning in past cases, as well as the aftermarkets definition from brick-and-mortar industries, to establish a framework for ecosystems. CADE's President Barreto de Souza referred to the US understanding of Google Shopping as an

[188] Robertson (n 11) 246.
[189] VHSE Robertson, 'Antitrust Market Definition for Digital Ecosystems' (2021) *Concurrences On Topic* No 2-2021, 3.
[190] For aftermarket cases, see eg *Eastman Kodak v. Image Technical Services*, 504 U.S. 451 (1992); Commission Decision IV/34.330, *Pelikan/Kyocera* (22 September 1995); *Digital Equipment v. Uniq Digital Technologies*, 73 F.3d 756 (7th Cir. 1996); Commission Decision IV/E-2/36.431, *Info-Lab/Ricoh* (7 January 1999); Case C-56/12 P *EFIM v. Commission* EU:C:2013:575.
[191] Commission Decision AT.40099, *Google Android* (2018) C(2018) 4761, para 624.
[192] Ibid, para 217.
[193] Commission Decision AT.40153, *E-Book MFNs and related matters (Amazon)* (2017) C(2017) 2876, paras 65, 112.
[194] See esp Robertson (n 189). On the functions of market definition – particularly in digital markets – see Robertson (n 11); Eben (n 11).

innovative application within the search engine, raising the link between market definition and justifiable commercial conduct.[195] In doing so, he (intentionally or not) made a connection between the integration and cluster arguments and the relevant product market. This raises the hope of a unified approach to ecosystem market definition. The authorities in the three jurisdictions might be closer to an answer than one may think. Going forward, it can be helpful to develop an international instrument, for instance under the auspices of the OECD or the International Competition Network, that identifies not only the issues of delineating relevant markets in digital ecosystem, but also presents a unified approach to doing so as well as changes that competition laws must make when relying on thus-defined relevant markets. Here, the international antitrust community can build on the OECD's recent efforts on digital ecosystem antitrust.[196]

4 Comparative Conclusions

This paper identified three key challenges of digital market definition as well as the current state of the decisional practice in the EU, US, and Brazil. In the past, substitutability analysis in case of zero-price services has received increased attention in decisional practice. Here, a consensus has emerged that zero-price services do create trade relationships with consumers which can be captured in an antitrust market, if we only find the right (quantitative or qualitative) tools to do so. Enforcers have shown a willingness to consider data or quality as parameters in quantitative tests. Though progress is being made, these tests are not yet fully operational, meaning decision-makers tend to resort to qualitative analysis. It seems likely that quantitative tests will be refined in the future in the three jurisdictions. Achieving a workable, robust set of quantitative tools does not seem far off, and would probably be achieved faster if there were cross-jurisdictional dialogue. In parallel, a cross-jurisdictional effort should be made to make qualitative analysis more robust.

In the present, multi-sided platform market definition is attracting the most attention in all three jurisdictions, and has gone through much the same evolution: from payment card systems and transaction platforms to more challenging 'non-transaction' platforms in search, social networking and other online services. A first tentative conclusion with regard to multi-sided platforms can be that the number of markets to define is likely to differ depending on whether

[195] Case n.08012.010483/2011-94 *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil* (2019) voto-vogal Presidente Alexandre Barreto de Souza, para 33.

[196] OECD, *Competition Economics of Digital Ecosystems* (December 2020) <https://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm> accessed 31 May 2021.

the services offered are 'transaction' products on a transaction platform or distinct products on non-transaction platforms. It remains to be seen whether this tendency will be confirmed in future decisions. In fact, the EU and Brazilian experience indicates a willingness to introduce more complexity in their definition of multi-sided markets, which may go beyond the transaction/non-transaction dichotomy. After several years of delineating digital platform markets, courts and competition authorities have already gained some confidence in this area, developing the first conceptual notions for multi-sided market definition, but the jury is still out on whether this will lead to a unified theoretical and practical framework, and whether the three jurisdictions will converge in their approach.

The emerging challenge raised by digital ecosystems has received the least attention in decisional practice to date, but will certainly represent an important focal point in the future of antitrust market definition. Ecosystems are reminiscent of the 'one-stop-shop' or cluster markets of the EU and US, and in Brazil there is a budding understanding of the link between product integration and demand for a product. The experience gathered in the delineation of multi-sided platform can be drawn upon to establish a market definition approach for digital ecosystems. In addition, the experience in cluster market and integration cases could serve, with some effort to instil coherence in the body of case law, as a blueprint for the definition of a single market for the ecosystem where there is in fact demand for a group of goods and services. Moreover, the lessons from aftermarket cases could aid in establishing principles for the definition of markets for both the ecosystem and the individual components, where this is relevant.

Digital platforms are a truly global phenomenon, with many of the companies involved having cross-border operations. The challenges they create for market definition are largely the same across the globe, even though particular systems may have their own unique characteristics. Frequently, zero-price services, multi-sided platforms and overarching digital ecosystems all come together. In his vote in the Brazilian *Google Shopping* case, CADE President Barreto de Souza highlighted the differences between the EU and Brazil when reflecting on the relevant market and the harm to competition. In particular, the distinctions in competitive conditions in the jurisdictions would justify a different approach to the relevant market.[197] It is right, of course, that the defined markets should differ depending on the precise competitive conditions in a particular jurisdiction. Yet, there is scope to adopt a more

[197] Case n.08012.010483/2011-94, *E-Commerce Media Group Informação e Tecnologia Ltda/Google Brasil,* voto-vogal Presidente Alexandre Barreto de Souza, paras 31–37.

harmonised approach to the methods of market definition in the context of zero-price services, multi-sided platforms, digital ecosystems and other challenges of the digital era. Doing so would increase coherence in the antitrust approach to companies and activities which do not restrict themselves to a specific jurisdiction. If companies can find strength in cross-border operations, competition authorities can too. There is sufficient overlap not only in the issues faced, but also in the thinking on these issues amongst the competition authorities of the EU, US, and Brazil. As President Barreto de Souza noted, the Brazilian authority and community could be the one to 'build bridges' in international competition law, leading the way in the establishment of a coherent framework to digital market definition based on the experience in the three jurisdictions. Additional jurisdictions are sure to join this endeavour.