The market definition notice and global containerised liner shipping end-to-end services

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The market for containerised liner shipping end-to-end services is a multi-sided global market. Logistics solutions based on high-technology industry and business intelligence and analytics systems dominate this market by enabling carriers to link ports and terminals, customs authorities, third-party logistics, inland transportation shippers and other actors simultaneously. The solutions depend entirely on the variety, volume and velocity of big data (the so-called three Vs). The three Vs are extremely volatile and change rapidly. As a result, the boundaries of the product and geographic dimensions of the market for global containerised liner shipping end-to-end services are evolving very quickly. This article argues that the new market definition notice should provide tools which must be such as to take account of the dynamic constraints of competition that arise on that market as a result.

Introduction

A market may be defined as the sum of all the buyers and sellers in a certain area where the value, cost and price of the traded products or services are per se forces of supply and demand. The main tool for the application of antitrust law is the definition of these items and the definition of the geographic area in which they are traded. In terms of antitrust law the market thus defined is known as the relevant market.

The definition of the relevant market used in the EU establishes 'the framework within which competition policy is applied by the EU Commission. [Its objective is] to identify those actual competitors of the undertakings involved that are capable of constraining those undertakings' behaviour and preventing them from behaving independently of effective competitive pressure'.[1] In other words, it must be determined whether 'the adoption of a certain course of conduct by an undertaking or a group of undertakings on the relevant market has the object or effect of preventing, restricting or distorting competition, thereby substantially restricting or eliminating competition and affecting trade between Member States of the European Union'.[2]

In 1997, the EU Commission adopted the notice on the definition of the relevant market. The notice sets out a step plan for the process of defining a market, explains that the viewpoint of the customer

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[1] Commission Notice on the definition of relevant market for the purpose of Community competition law [1997] OJ C372 (9 December 1997) 5–13, point 2.

[2] Christian A Melishek *The Relevant Market in International Economic Law: A Comparative Antitrust and GATT Analysis* (Cambridge University Press 2013) 274.

is the most important factor and defines types of evidence the Commission will rely on. It indicates which products or services provide a competitive constraint and excludes those that are not considered to be competitive. Within this perimeter, the Commission calculates market shares and uses them as indicators of market power.[3]

In March 2020, the Commission asked stakeholders whether the notice was still up to date and launched a consultation on a possible review. The consultation closed on 9 October 2020. It gathered responses from 96 stakeholders and all national competition authorities (NCAs).

The NCAs agreed that digitalisation is the main trend and that it calls, among other things, for guidance on issues like multi-sided platforms, services offered 'for free' (ie for no charge), the role of data and digital 'ecosystems'.[4] This article addresses some of the constraints of competition that may result from these issues, thus influencing the definition of the market for global containerised liner shipping end-to-end services.

General

High-technology industry forms the basis of business intelligence and analytics systems. Over the past two decades, maritime logistics have become almost totally dependent on high-technology industry and business intelligence and analytics systems, thus provoking a move from supply chain models to commodity-driven logistics solutions.

Logistics solutions based on high-technology industry and business intelligence and analytics systems enable carriers to make or adjust business decisions at very short notice. As a result, these solutions have paved the way for global containerised liner shipping end-to-end services by enabling carriers to link ports and terminals, customs authorities, third-party logistics, inland transportation shippers and other actors simultaneously. The positive reaction of large customers to this business model has induced big carriers to shift their focus to global services. Their principal motivation is 'to mitigate cyclicality, create greater predictability of revenue, create value for customers and be compensated in kind, and defend against disruption by new forms of industry'.[5]

Global end-to-end services oblige a carrier to transport containerised cargo to its inland destination. The carrier has the final responsibility for the proper implementation of the contract with the customer. Therefore it is the carrier, including the alliance it belongs to, that determines the port-of-call, rather than policy-makers or regulators.[6] The same goes for the determination of a container marine terminal operator. This is the entity for negotiation on the demurrage,[7] detention[8] and per diem[9] charges for the use of terminal space and equipment. Shippers, consignees and drayage providers cannot independently select a terminal operator or negotiate the charges for its services. Consequently, in concluding contracts with carriers, they depend on the contract and the charges agreed between the carrier and the terminal operator.

Customers of global end-to-end services want to agree and control their costs upfront and to receive a commitment for the transport of their cargo with estimated times of arrival (ETA) at the various intermediate points, predicted as accurately as possible.

A carrier will only be able to meet these demands if it has full control over every stage of the transportation process and over the coordination of the activities of all actors involved. Therefore, it

[3] Shearman & Sterling LLP's response to the EU Market Definition Notice consultation (12 October 2020) 1.

[4] https://ec.europa.eu/competition-policy/public-consultations/2020-market-definition-notice_en.

[5] Peter Tirschwell 'End-to-end logistics pursuit holds risks for major container lines' https://www.joc.com/maritime-news/container-lines/end-end-logistics-pursuit-holds-risks-major-container-lines_20181128.html.

[6] V Flitsch 'Port cooperation between European seaports: fundamentals, challenges and good practices' Frauenhofer Center for Maritime Logistics and Services CML (23 September 2016) para 2 www.guengl.eu.

[7] Demurrage is the charge assessed for cargo occupying terminal space.

[8] Detention is the charge to shippers and consignees for use of ocean containers and other equipment (eg chassis).

[9] The per diem is the daily charge to drayage providers for use of ocean containers and equipment.

must be ensured that: (i) the providers of inland services use the same information technology (IT) standards as the carrier uses for the deep-sea services; and (ii) the source code that lies at the heart of the business intelligence and analytics system used by the carrier for making its overall business decisions relates to both the activities concerning the deep-sea and the inland leg; and (iii) that the required rigorous harmonisation of the activities in both legs is guaranteed by the semantic interoperability of the computer programs of all actors involved, both with each other and with the business intelligence and analytics system used by the carrier.[10]

Considering the above I take the view that, by reason of their characteristics, prices and intended use, global containerised liner shipping end-to-end services are not interchangeable for, or substitutable with, other services. This implies that the market for these services is an autonomous market that can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas. It therefore qualifies as a relevant market in the sense of the notice.

The relevant market for global containerised liner shipping end-to-end services

The product dimension

With the proviso that the notice does not fully cover recent evolutions in market definition practice, including those related to the digitalisation of the economy, the EU Commission takes the view that the basic principles of the notice, based on the case law of the EU courts, remain sound today.[11] I am of the opinion that these basic principles, as well as the present case law of the EU courts, do not adequately reflect the impact of logistics solutions based on high-technology industry and business intelligence and analytics systems on the temporal component of the product dimension of the market for global containerised liner shipping end-to-end services.

High-technology industry is 'characterised by rapid innovation with the creation of new products, platforms, or services, and by the reduction of production costs as a result of competitive pressure … [It relies heavily] on intellectual property'.[12] High-technology industry markets feature high sunk costs, regulatory barriers to entry and often involve strategic bottlenecks.[13]

Business intelligence and analytics is often referred to as 'the techniques, technologies, systems, practices, methodologies and applications to analyze critical business data to help an enterprise better understand its business and market and make timely business decisions'.[14]

A small advantage in early competition as a result of a new innovation in the field of business intelligence and analytics systems – which are entirely based on high-technology industry – may 'tip' the market, particularly when the innovative product is protected by intellectual property (IP) rights.[15]

The constant and extremely rapid pace of change in high-technology industry and business intelligence and analytics systems causes imperfect competition.[16] The variety, volume and velocity of big data (the so-called three Vs),[17] and therefore of the logistics solutions based on high-technology industry and business intelligence and analytics systems, are extremely volatile and

[10] For an assessment of the antitrust and other issues facing actors who are involved in the implementation of the services see A J Braakman 'Shipping lines create a trinity: digitalisation, globalisation, monopolisation' (2019) 25 *Journal of International Maritime Law* 1.

[11] https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3585.

[12] Alexander Italianer 'Level playing field and innovation in technology markets' Speech at the Conference on Antitrust in Technology (Palo Alto, 28 January 2013) 2.

[13] https://www.slideshare.net/dr_martyn_taylor/competition-law-in-high-technology-industries-lessons-for-australia.

[14] Hsinchun Chen and others 'Business intelligence and analytics: from big data to big impact' (2012) 36(4) *MIS Quarterly* 1165.

[15] Jonathan B Baker 'Can antitrust keep up? Competition policy in high-tech markets' *Brookings* (1 December 2001).

[16] https://www.slideshare.net/dr_martyn_taylor/competition-law-in-high-technology-industries-lessons-for-australia.

[17] See P Zikopoulos and others *Harness the Power of Big Data: The IBM Big Data Platform* (McGraw-Hill Professionals 2012); see also J Berman 'Introduction' in Jules Berman *Principles of Big Data* (Morgan Kaufman 2013) xix–xxvi.

change rapidly.[18] These changes affect demand and supply and, as a consequence, the boundaries of the product dimension of a market.

Considering the above I take the view that the temporal component of the product dimension of the market for global containerised liner shipping end-to-end services should be considered an independent dimension in itself.[19] I feel encouraged in this view by the decision of the EU Commission relating to the *ABG Oil* case. In this decision, the Commission considered the temporal dimension of the oil market and defined it only at the time of the global oil crisis in the 1970s.[20]

The geographic dimension

The relevant *geographic* market comprises the area in which the companies concerned are involved in the supply and demand of products or services and in which the conditions of competition are sufficiently homogeneous. This market can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.[21]

With regard to the maritime industry, the EU Commission and the EU courts held that the relevant geographic market consists of the area in which containerised liner shipping services are marketed (the catchment area). The decisions and judgments determine that the EU-end of the catchment area consists of a range of ports in northern Europe and a range of ports in the Mediterranean.[22]

This case law implies that there are different relevant geographic markets for global containerised liner shipping end-to-end services, namely the market for inland transport services – which shippers acquire together with other services as part of a multimodal transport operation for the carriage of containerised cargo – and the market for maritime transport services.[23] The General Court held that this distinction leads to the application of a different legal regime for the assessment of anti-competitive behaviour in each of these geographic areas.[24]

Within one and the same port there may be competition between several service providers (e.g. two terminals). The organisation of port operations in the geographic area of a port may very well be defined as encompassing only one and single port.[25] The size of this port is ultimately of relatively little importance, as the lack of substitutability with another port, depending on the traffic concerned, is a relevant factor frequently retained.[26] This implies that, under EU antitrust law, also a single port from which traffic cannot easily be transferred to other ports may qualify as a relevant geographic market.

The above demonstrates that EU antitrust law recognises different relevant geographic markets for global containerised liner shipping end-to-end services, namely the market for deep-sea transport services, the market for inland transport services and the market for single ports in northern Europe and in the Mediterranean, from where traffic cannot easily be transferred to other ports.

The question then arises whether the advanced state-of-the-art logistics solutions that are deployed, together with the absolutely rigorous coordination of the activities of all the actors involved, allow for a fractioning of the geographic market for global containerised liner shipping end-to-end services. For the following reasons I take the view that this question should be answered in the negative.

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[18] Study by the French and German antitrust authorities on competition law and Data 44 of 10 May 2016 (Franco/German Study) www.bundeskartellamt.de/SharedDocs/Publication/DE/Berichte/Big%20Data%20Paper.html?nn=3591568.

[19] Alison Jones and Brenda Sufrin *EU Competition Law: Texts, Cases, and Materials* (5th edn Oxford University Press 2014) 331.

[20] Commission Decision 77/327/EEC of 19 April 1977 relating to a proceeding under Article 86 of the EEC Treaty (IV/28.841—ABG/Oil companies operating in the Netherlands) [1977] OJ L117 1 (May 1977).

[21] See n 1 point 8.

[22] Revised TACA Decision 2003/68/EC [2003] OJ L26, 53 para 39 (31 January 2003).

[23] Decision 1999/243/EC relating to a proceeding pursuant to Articles 85 and 86 of the EC Treaty (TACA Decision) (n 34) para 519.

[24] Case T-395/94 *Atlantic Container Line and Others v Commission* ECLI:EU:T:2002:49 (28 February 2002).

[25] Competition concerns in ports and port services, EU Commission Working Party No 2 on Competition and regulation; DAF/COMP/WP2/WD(2011)40 (27 June 2011) 2.

[26] Philippe Corruble *EU Competition Law Applicable to Liner Shipping and Seaports* (Bruylant 2021) 57 and 58, with citations.

The rigorous coordination of activities between the individual stages of the services require the semantic interoperability of the computer programs of all actors involved, both between one another and between these programs and the business intelligence and analytics system used by the carrier. The vital importance of ensuring a perfect match has turned these stages into an indissoluble entity, unable to function in conditions where an individual stage is malfunctioning. A global end-to-end contract is therefore an indivisible contract.

According to present EU law, a fractioning of the relevant geographic market into different areas would entail that in each area a different legal regime would have to be applied for the assessment of anti-competitive behaviour. The overall indivisible contract, and not the subcontracts that cover the different geographic areas is subject to EU antitrust law. Therefore, a fractioning of the relevant geographic market is likely to result in an inherently contradictory and illogical assessment of the constraints of competition emanating from the overall contract.

Considering the above I take the view that the deployment of advanced state-of-the-art logistics solutions based on high-technology industry and business intelligence and analytics systems entails that the geographic market for global liner shipping end-to-end services should be defined as the entire area ranging from the point of origin – ie the location where the cargo is loaded – to the point of consumption, ie the location where this cargo is unloaded and delivered to the customer, and that constraints of competition should furthermore be assessed under one and the same legal regime.[27]

Conclusion

The new market definition notice should provide tools that allow regulatory authorities and market participants to assess the dynamic constraints of competition emanating from the logistics solutions based on high-technology industry and business intelligence and analytics systems deployed in the market for global containerised liner shipping end-to-end services under one and the same legal regime.

Constraints of competition emanating from activities in neighbouring markets

Introduction

The EU Commission, followed in this respect by the EU courts, has routinely undervalued the constraints of competition from activities in a market downstream or upstream from the relevant market under consideration, or in a neighbouring market closely related to this market (hereinafter collectively referred to as neighbouring markets).[28] I take the view that the deployment of advanced state-of-the-art logistics solutions demonstrates that this position is no longer sustainable with regard to the market for global containerised liner shipping end-to-end services. The assessment of constraints of competition on this market emanating from activities performed in closely related neighbouring markets should also be accounted for, particularly if these constraints emerge from arrangements on different neighbouring markets between the same parties.

The DCSA Agreement

Maersk A/S, CMA CGM, Mediterranean Shipping Co, Hapag-Lloyd and Ocean Network Express (ONE) have entered into an agreement on the development and free availability of common IT standards for the entire shipping industry (the Digital Container Shipping Association (DCSA) Agreement). The DCSA is a neutral, non-profit organisation for ocean carriers. The purpose of the DCSA Agreement is to permit the parties to discuss, develop and utilise common or compatible IT standards for the creation, transmission and/or storage of data related to the receipt, handling, delivery and/or storage of property between participants in the international ocean transportation supply chain. The work undertaken is for the benefit of the entire industry, as all standards will be openly published and will be available free of charge to interested external parties. This implies that

[27] See Case M.6059—*Norbert Dentressangle/Laxey Logistics*, paras 9–16.
[28] Shearman & Sterling (n 3) 3.

they qualify as open standards. The DCSA has no intention of developing or operating any digital platform and is not working on topics of a commercial or competitive nature.

The TradeLens Agreement

Maersk GTD Inc has entered into a joint venture with IBM for the purpose of the development and commercial marketing of a cloud service (known as the platform) that enables participants in the international ocean transportation supply chain to exchange data by means of a blockchain-enabled, global trade digitised solution. Subsequently, the parties have entered into the so-called TradeLens Agreement. The purpose of the TradeLens Agreement is to enable shippers, authorities and other stakeholders to exchange data on supply chain events by accommodating this data under a business intelligence and analytics system that serves as a single, secure data-sharing and collaboration platform. Under this agreement, the parties are allowed to discuss and agree, both among themselves and with Maersk GTD and IBM (jointly referred to as the platform providers) on the terms and conditions of their provision of data to the platform, the permitted use of such data and the input into products and services to be offered on the platform and the marketing of same. They are not allowed to discuss or agree on: (a) the vessel capacity to be deployed by any of them; or (b) terms and conditions under which any party provides ocean transportation services to its customers. The data to be discussed by the parties shall not include rates, charges or other terms and conditions agreed upon by a party and its customers.[29]

Market definition

DCSA

The relevant market for activities covered by the DCSA Agreement may be defined as the market for freight-forwarding services, ie the market for the organisation of transportation of items (possibly including activities such as customs clearance, warehousing, ground services, etc) on behalf of customers according to their needs.[30]

TradeLens

The relevant market for activities covered by the TradeLens Agreement may be defined as the market for contract logistics services, ie the market of the supply chain process that plans, implements and controls the efficient and effective flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet customers' requirements.[31]

Legal definition of the cooperation between the parties in DCSA and TradeLens

Under EU antitrust law, a commercial arrangement whereby two or more independent companies combine or pool their resources, assets or business units in order to develop a business or achieve a specific task (normally for a finite period of time) is referred to as a joint venture. The rationale underpinning joint venture activity is that more can be achieved through cooperation (for instance with a vertically positioned trading partner or a horizontally aligned competitor) than can be achieved alone.

Joint ventures can range from merger-like activity involving the creation of a jointly controlled company (complete with its own assets, infrastructure, management and customers) to cooperative activity of a non-structural nature. Activity may, at one extreme, entail loose and clearly benign forms of cooperation (ie limited to particular functions or activities such as research and

[29] For a discussion of these phenomena and the way they have been dealt with by the US Federal Maritime Commission: see A J Braakman 'Does the digital Leviathan spell the end of fair competition in the shipping industry?' (2020) 26(5) *Journal of International Maritime Law* 1.

[30] Case M.8594—*COSCO SHIPPING/OOIL*, para 23; Case M.8120—*Hapag-Lloyd/United ARAB Shipping Company*, para 26; Case M.7268—*CSAV/HGV/Kühne Maritime/Hapag-Lloyd*, para 3; M.6059—*Norbert Dentressangle/Laxey Logistics* (n 27) para 17.

[31] Case M.6059—*Norbert Dentressangle/Laxey Logistics* (n 27) paras 9–16.

development or purchasing) to forms of very intense cooperation at the other extreme (ie where the parties to the joint venture coordinate with competitors in sensitive areas such as price and output – dangerously similar to cartels).[32]

Joint ventures that have as their object or effect the coordination of the competitive behaviour of companies that remain independent must be appraised in accordance with the criteria of Articles 101(1) and 101(3) of the Treaty on the Functioning of the European Union (TFEU), with a view to establishing whether or not the operation is compatible with the common market. In making this appraisal, the EU Commission must particularly take into account:

(i) whether two or more parent companies retain, to a significant extent, activities in the same market held by the joint venture, in a market downstream or upstream from the market of the joint venture, or in a neighbouring market closely related to this market,
and
(ii) whether the coordination which is the direct consequence of the creation of the joint venture affords the companies concerned the possibility of eliminating competition in respect of a substantial part of the products or services in question.

The parties do not retain additional activities in the markets held by the DCSA and the TradeLens joint ventures, but they are, to a significant extent, active as competitors in their main common market, namely the market for global containerised liner shipping end-to-end services.

The parties exercise decisive control in the implementation of both the DCSA and the TradeLens joint ventures. The object or effect thereof is that the joint ventures are implemented in close conjunction with each other. This conjoint implementation and the resulting coordination of activities afford the parties the possibility of eliminating competition in respect of a substantial part of the products or services traded on the markets where the joint ventures are active. The coordinated activities of both joint ventures are supportive of, and complementary to, the activities of the parties on their main common market, ie the market for global containerised liner shipping end-to-end services. It follows that this market is a neighbouring market, which is closely related to both the market for freight forwarding services and the market for contract logistics services. I take the view that the conjoint implementation of the DCSA and the TradeLens joint ventures together with the coordination of activities on their respective relevant markets imply (i) that each joint venture entails intense cooperation and (ii) that coordination of the activities may lead to serious antitrust concerns on the closely related neighbouring market for global containerised liner shipping end-to-end services. This view is based on the following considerations.

Common IT standards lie at the heart of business intelligence and analytics systems governing the entire decision-making process of global end-to-end services. All actors engaged in the implementation of these services must use computer programs that are semantically interoperable with these systems. Therefore all actors must use the same IT standards.

Companies that want to do business with carriers that support TradeLens have no option but to use the same IT standards as those used by the carrier and the TradeLens platform. This means that they are forced to use the DCSA IT standards.

Companies that want to do business with carriers that support TradeLens are also forced to supply the required data to the TradeLens platform. At a press conference on the occasion of the presentation of the company's half-year interim report on 15 August 2019, Maersk's CEO Søren Skou said: 'So we can basically force them to join the platform. Because if they want to do business with us they have to supply data'.[33]

The data supplied by the users of the TradeLens platform is stored in the TradeLens database. The object or effect of the decisive control of this database exercised by the parties is the full advantage to be taken of this database for purposes like improving the DCSA IT standards.

[32] https://www.lexisnexis.co.uk/legal/guidance/the-legal-treatment-of-cooperative-joint-ventures-under-eu-competition-law.
[33] *Shipping Watch* (20 August 2019).

More often than not, the data stored in the TradeLens database is of a strategically sensitive nature. The advanced state-of-the-art features of the logistics solutions deployed in the computer programs of the users of the TradeLens platform make it very difficult, if not impossible, to dissociate strategically sensitive from strategically non-sensitive data. By necessity, therefore, the use by the parties of the TradeLens database with a view to improving the DCSA IT standards would oblige the use of strategically sensitive data.

Companies that supply the required data to the TradeLens platform have a vested interest in preventing the strategically sensitive components of this data from falling into the wrong hands. As dissociation of strategically sensitive from strategically non-sensitive data is virtually impossible, these companies will insist on confidentiality of all the data they have supplied, preventing third parties from having access to the TradeLens database.

Also, the parties have a direct interest in keeping the TradeLens database firmly closed. TradeLens is to 'become a new source of income' for the parties, said Maersk's CEO Søren Skou during a press meeting in connection with the presentation of the company's half-year interim report on 15 August 2019.[34] Releasing data to third parties would undermine that objective.

The supply of data that is in part strategically sensitive to the TradeLens platform and the refusal of third-party access to the TradeLens database is likely to result in an ever-growing quality difference between the DCSA IT standards, which are based on this data, and competing IT standards, which have to do without. As a result, the barriers of entry to the market for freight forwarding services are likely to be raised significantly.

Over 170 companies have already joined the TradeLens platform. They include the majority of the world's biggest carriers that all together represent a capacity equivalent to more than a third of global capacity. TradeLens is well on its way towards integrating those carriers' data. The parties will use the ever-expanding TradeLens database for further sophistication of the business intelligence and analytics systems used by the TradeLens platform. Companies that supply data to the platform must ensure that their computer programs are semantically inter-operable with these systems. So, these computer programs must be fine-tuned again and again in order to suit the changes made in the business intelligence and analytics systems used by the platform. This implies that the parties' exclusive right of access to the TradeLens database is likely significantly to raise the barriers of entry to the market for contract logistics services.

The coordination by the parties of their activities on their respective relevant markets is supportive of, and complementary to, their activities on the closely related neighbouring market for global containerised liner shipping end-to-end services. Therefore, the coordinated activities of the DCSA and the TradeLens joint ventures must be assessed from their conjoint, not solitary impact on competition on the latter market.[35] Not only should this assessment take account of the impact on competition of the parties' exclusive right of access to the TradeLens database between themselves, but also of the impact on competition between the parties and other stakeholders as a result of the latter being foreclosed to that database.

Considering the above, the TradeLens database appears to be the key factor for assessing the antitrust issues on each of three above-mentioned relevant markets. In regard to each market the question arises whether the TradeLens database must be regarded as an essential facility. Big data qualifies as an 'essential facility' if it can be demonstrated that it is truly unique, that there are no alternatives and that there are technical, legal or economic obstacles that make it impossible or unreasonably difficult to develop it, even in possible cooperation with other companies.[36] I take the view that it would seem justifiable to argue that the TradeLens database is indeed an essential facility on the

[34] ibid.

[35] See A J Braakman 'FMC wrongly gives TradeLens a pass' *Journal of Commerce Online* (30 October 2020).

[36] Case C-7/97 *Bronner* ECLI:EU:C:1998:569 (26 November 1998). On this topic see also Corruble (n 26) 59 ff and Damien Gérardin and Monika Kuschewsky 'Competition and personal data: preliminary thoughts on a complex issue' (2013) https://dx.doi.org/10.2139/ssrn.2216088.

markets for freight forwarding services, for contract logistics services and for global containerised liner shipping end-to-end services. According to this view, the TradeLens database would have to be opened up to third parties who are able to show that they meet the above-mentioned conditions.

Conclusions

The competitive arms race for data is a race to connect the 'data' bucket with the 'money' bucket:[37] 'The more data you can collect, the more you know, the better product you can provide, but also the more powerful you will be towards others'.[38]

Market power is assessed on the basis of the market share, which a company or companies have within a relevant market, ie the area where it/they are involved in the supply and demand of products or services.

Market definition methods that focus on static patterns of competition disregard the constraints of competition emanating from the dynamic and responsive forces and from the empirical realities at play in the digital economy.[39] Therefore, these methods need to shift their focus away from static onto dynamic constraints of competition.

The volatility of the variety, volume and velocity of big data, and therefore of logistics solutions based on high-technology industry and business intelligence and analytics systems entail that the product and geographic boundaries of a relevant market change very rapidly. So, in defining these boundaries, the temporal component of the product dimension of a relevant market should be considered an independent dimension in itself.

The effects of the inclusion of the temporal component of the product dimension into the definition of the relevant market as an independent dimension in itself are likely to vary with the structure of the market under consideration. As a result, even when focused on dynamic constraints of competition, the new market definition notice is unlikely to provide for each sector of the economy sufficient guidance properly to define the relevant market in question. Additional instruments will be needed. I endorse the proposal made by Petit and Schrepel that one of these additional instruments could be 'an open-access database containing all the relevant product and geographic markets defined in the last 20 years. The database would cover both antitrust and merger cases. It would be regularly updated with new market definitions'.[40]

[37] M E Stucke and A P Grunes *Competition Policy and Big Data* (Oxford University Press 2016) 1.

[38] MLex interview with Margrethe Vestager (22 January 2015) http://mlexmarketinginsight.com/wp-content/uploads/2015/01/MLex-Interview-Vestager-22-01-15.pdf.

[39] For a clear explanation see Nicolas Petit and Thibault Schrepel 'Evaluation of the Commission Notice on market definition in EU competition law' (15 May 2020) file:///C:/Users/User/Downloads/090166e5cf52e58e.pdf.

[40] ibid.