

International

The Data Economy: On Evaluation and Taxation

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While data-centred business models are claiming an ever-growing share of worldwide revenue, regulatory efforts to identify proper tax rules for the relevant activities are intensifying. It is questionable whether or not the proposals currently on the table capture the distinctive features of the data economy. The formulation of appropriate tax rules requires a thorough understanding of the mechanics of data processing activities and due consideration of the difference between information, which is an intangible asset, and tangible assets.

1. Introduction

It is widely acknowledged in the areas of business, legislation and policymaking, as well as administration and human rights protection, that the dominion of data is increasing.^[1] This is clearly illustrated by the series of legislative initiatives launched and/or adopted in order to provide a legal framework applicable to the unstoppable flow of data.^[2]

Data collection and analysis are not, however, new processes. In particular, data processing is deemed to encompass:^[3]

any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

It is clear from this definition that data processing is an age-old procedure that underlies all economies. In fact, business and trade are borne from the observation of people's needs and preferences, i.e. from the collection of data, which is then analysed (by more or less automated means) to identify how best to address such needs and preferences.

What is different today is the technology used in data processing and the vast possibilities such technology promises. The virtual network of modern communication technologies enables the release and exchange of huge amounts of personal data every second on a global scale. Such data can be collected and recorded regardless of quantity, something that human memory and non-automated means of recording (such as documentation) could never achieve on their own. In addition, new technologies can analyse data effectively in different ways, as well as combine, summarize and draw conclusions from any quantity and type of data. And such conclusions can be communicated to any number of interested persons in a comprehensive and timely manner. Using artificial intelligence, such conclusions can also take the form of (i) decisions taken on behalf of decision makers, based on data analytics to evaluate alternatives and probabilities of success and considering the specific interests to be served or (ii) options of decisions, including pros and cons. In other words, today, data is a key driver in the design of business strategy, whereas it used to simply act as a source of information.^[4]

Although it is arguable that the intrinsic value of data used to be ignored, the increase in the amount of data, the ways of processing it and the potential of artificially intelligent systems to activate business processes on the basis of data analytics has turned data into a goldmine. The question of data evaluation is thus becoming more prominent, together with the issue of the proper and effective taxation of transactions involving data. Indeed, national and international policymakers are now concentrating their efforts on designing a tax regime for data-centred business models. A prime example is the European Commission's short-term proposal for a digital services tax

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1. This is also acknowledged in the literature. According to Yuval Noah Harari, "science is converging on an all-encompassing dogma, which says that organisms are algorithms and life is data processing". This dogma lies at the foundation of the techno-religion alleged as distinguishing the modern era. Harari also contends that people "want to be part of [this] data flow, even if that means giving up their privacy, their autonomy and their individuality". See Y.N. Harari, *Homo Deus: A Brief History of Tomorrow* (Harvill Secker 2016).

2. By way of an example, the European Union, in April 2016, adopted the General Data Protection Regulation (GDPR) in order to address concerns regarding the protection of personal data (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 Apr. 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC , OJ L 119 (2016), EU Law IBFD [hereinafter GDPR]). See B. Krähenbühl, *Personal Data Protection Rights within the Framework of International Automatic Exchange of Financial Account Information* , 58 Eur. Taxn. 8 (2018), Journals IBFD.

3. Art. 4 GDPR.

4. T.C. Redman, *4 Business Models for the Data Age* , Harvard Bus. Review (20 May 2015), available at <https://hbr.org/2015/05/4-business-models-for-the-data-age> (accessed 29 Mar. 2019).

on business, which draws its main value from user participation (through user data processing or user content exploitation).^[5] Another line of development is being developed at an international level through the BEPS Inclusive Framework within the context of the effort to identify an appropriate system to tax the digital economy.^[6]

In light of the above, the present article focuses on the evaluation of data and the urgent need to enact tax rules for the fair and effective taxation of income from data-centred business models. The article contains six sections. Section 2 illustrates some of the most common business models in respect of the data-centred economy. Section 3 aims to reconstruct the data-processing value chain, seeking to identify the different ways to extract value. Section 4 addresses the method used to assess the value of the data and the value drawn from data processing, while section 5 addresses tax regimes that have been proposed for the taxation of the data economy. Finally, section 6 concludes that a prerequisite to fair and effective taxation of the data economy is a thorough understanding of the data economy.

2. Data-Centred Economy: Business Models

2.1. Introductory remarks

There are various ways to extract value from big data,^[7] create new value and capture value.^[8] In recent years, which have been marked by digitalization, data analytics has become a core aspect of several industries, such as healthcare, retail, marketing and advertising, publishing, gaming, accounting, etc. These industries have become so data-focused that there is hardly an industry left that has not integrated big data analytics into its processes. If there is such an industry, it will soon be forced to change its practices.

There are three basic classifications of data-centred business models through which enterprises monetize big data. The distinction is based on the principal purpose for which the enterprise processes the data:

- differentiation of a company's offering;
- brokering of information; and
- delivery of data exchange networks.^[9]

Under each category there are sub-classifications. Hence, businesses can differentiate their offering by (i) creating a completely new product or service; (ii) identifying new ways for the existing offer to create more satisfaction for the buyer; and/or (iii) ensuring more contextual relevance for the buyer during his experience with the existing product or service (i.e. have a more intense and positive effect on his feelings).

Information-based brokering might take place through (i) the sale of raw data; (ii) the supply of benchmarking services; and/or (iii) data analysis and the extraction of targeted input. Finally, networks can be delivered by (1) providing the (online) marketplace; (2) intermediating the conclusion of agreements between a provider and purchaser and (3) permitting marketing/advertising activity.

2.2. Differentiation – Online retail sector

The online retail sector provides illustrative examples of how data analytics can be used to differentiate the products or services offered.

First, customer and potential customer data^[10] is processed to identify market trends. The input that arises is then funnelled to the manufacturing department, which identifies a trend. Provided that the data analytics systems employed are fast and effective, the enterprise can respond in an informed manner to market needs at their peak, aligning production rate with foreseeable market demand and minimizing the risk of unsold items.^[11]

Secondly, the retailer can differentiate the customer's purchase experience, for example, through tools combining the specific customer's data with other stored data. For instance, online fashion platforms seek to enable customers to virtually try on clothes that they are interested in buying.^[12] Offer differentiation can also be achieved through the elaboration of the content created or released by users online for several other industries not connected with the one using the data to differentiate its offer.^[13]

5. European Commission, [Proposal for a Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services](#) (DST Proposal), COM(2018) 148 final (2018), EU Law IBFD.

6. Inclusive Framework on BEPS, *Tax Challenges Arising from Digitalization – Interim Report 2018* (OECD 2018), available at <https://bit.ly/2rX9eID>.

7. Big data is described as a "situation where the volume, velocity and variety of data exceed an organization's storage or compute capacity for distinguishable and timely decision making" (Y. Perweij, *An Experiential Study of the Big Data*, 4 Int. T. Electr. Energy 1 (2017)).

8. The value captured must be distinguished from the value created. There is value creation whenever an action or course of action leads to a benefit that exceeds the cost. Although value creation is a pre-condition to value capture, it does not necessarily imply it. Capturing value is connected with the profit actually made by the enterprise and depends mainly on the selling price. M. Ryall, *Don't Just Create Value; Capture It*, Harvard Bus. Review (6 June 2013), available at <https://hbr.org/2013/06/dont-just-create-value-capture-it> (accessed 29 Mar. 2019); M. Lennard, *Act of Creation: the OECD/G20 test of "Value Creation" as a basis for taxing rights and its relevance to developing countries*, 25 TNCS 3 (2018).

9. R. Wang, *What a Big-Data Business Model Looks Like*, HBR (6 Dec. 2012), available at <https://hbr.org/2012/12/what-a-big-data-business-model> (accessed 29 Mar. 2019).

10. Such data may be gathered from sales, blogs and social media platforms.

11. J. Brownlow et al., *Data and Analytics – Data-Driven Business Models: A Blueprint for Innovation. The Competitive Advantage of the New Big Data World* (University of Cambridge 2015).

12. Another example is Project Muze, which enabled customers to design their own clothes online using artificial intelligence, the processing of data from the fashion industry and aesthetic parameters. See M. Veitch, *Zalando relies on technology to aid fashionistas* (IDG Connect 2016), available at <https://www.idgconnect.com/>

2.3. Brokering information – Benchmarking

It has been argued that the value of data is maximized at the time of sale.^[14] Evidence of this is the sale of various databases that range from raw data to targeted multi-level data analytics.^[15] Briefly, such databases gather data of interest to a specific customer target group and provide access to the data so gathered. It could also include data analytics services tailored to the customer's purpose or a combination of data with other data provided by the customer or stored in the database. Such services are, in principle, provided in exchange for a subscription or access fee. Apart from benchmarking databases, data can be sold, for example, the data of users of an online platform and/or the content created thereby.

2.4. Delivery of networks – Marketing

The third category of data-centred business models aims to extract value from the communication of data between the holder of the information and the interested purchaser/user. Such communication can lead to value for:

- a person who provides the communication route, or facilitates the meeting of the interested parties by providing a targeted context or marketplace, for example, a housing rental website;
- a person who facilitates the conclusion of an agreement between the interested parties, for example, by certifying the quality of the products/services of the provider or by enabling the collection and publication of customer input on products/services;
- a person who speeds up identification of the targeted product/service by the customer, for example, through the performance of advertising activities.

Marketing is one of the sectors that has benefitted the most from big data analytics. Advertisers can now direct their promotional activity to the targeted/interested customers, which saves costs and maximizes success. Interestingly, the advertiser can analyse the same data multiple times for multiple products/services to be promoted and from different angles.

3. Reconstructing the Data-Processing Value Chain

From section 2, it is apparent that there are several ways to derive value during the different stages of data processing. Such value can also be derived multiple times from the same data source.

Identifying the persons that contribute to value creation and gain value from relevant processes and assessing the relevant value share is a condition precedent to designing suitable tax rules. The new business models have different mechanics than the brick-and-mortar economy in respect of which the current tax rules have been tailored.^[16] It is therefore crucial to understand the new, data-centred ways of doing business to properly adjust the rules.

A breakdown of the activities performed under the business models outlined in section 2 would allow for the identification of the key players involved in data processing who can hence claim rights over such value. These key players include:

- the data subject, i.e. the user or consumer to whom the data refers (initial possessor of the personal data – passive user) or who creates the digital content (initial holder of the content – active user);
- the provider of the automated data processing technology, including manufacturers and maintenance service providers that design and ensure the operation of the technology needed to process the data in a specific manner;
- the data collector, i.e. any person who employs the necessary technology and uses it in order to collect specific data for a business purpose;
- the data analyser, i.e. any person who disposes of the necessary technology and of the collected data and know-how and engages in specific data analysis or a data combination for a specific business purpose;
- the purchaser of the data or of the outcome of a data analysis process, i.e. any person who identifies a profit-making use of the raw data or of the conclusions drawn therefrom and seeks to use such information in order to create a new offer or enhance an existing one; and
- the provider of any services relevant to data collection and processing, i.e. any person who activity enables, facilitates or speeds up the communication and analysis of the data.

[idgconnect/interviews/1018942/zalando-relies-technology-aid-fashionistas](https://blog.google/around-the-globe/google-europe/project-muze-fashion-inspired-by-you/) (accessed 29 Mar. 2019); see A. Rietze, *Project Muze: Fashion inspired by you, designed by code*, The Keyword (2 Sept. 2016), available at <https://blog.google/around-the-globe/google-europe/project-muze-fashion-inspired-by-you/> (accessed 29 Mar. 2019).

13. By way of example, journalists and bloggers can collect digital content and information available online in order to analyse it, elaborate on it and produce new content for their targeted readers. Similarly, software providers can use such content in order to produce new software or enhance the quality of existing software, feeding them an increased amount of information relevant to consumers.

14. A. Lewis & D. McKone, *To Get More Value from Your Data, Sell It*, Harvard Bus. Review (21 Oct. 2016), available at <https://hbr.org/2016/10/to-get-more-value-from-your-data-sell-it> (accessed 29 Mar. 2019).

15. Examples of such databases include Bloomberg and Bureau van Dijk. See Wang, *supra* n. 9.

16. P. Valente, *Taxless Corporate Income: Balance Against White Income, Grey Rules and Black Holes*, 57 Eur. Taxn. 7 (2017), Journals IBFD and OECD, *Action Plan on Base Erosion and Profit Shifting* (OECD 2013), International Organizations' Documentation IBFD.

Furthermore, it can be concluded that data processing, including digital content, involves various stages, as follows:

- ownership of raw data by the data subject;
- release of raw data from the data subject/user on a system/platform that can record it;
- recording and saving the individual data released by the system/platform, while applying the necessary data protection mechanisms;
- collection of the data by an appropriate system/platform;
- removal of data that can be considered useless;
- archiving and primary grouping of data;
- primary processing of the data collected in order to draw targeted conclusions, create new content or improve existing content;
- combining the conclusions drawn from a primary analysis of the data (or the content primarily created/improved) with new data or conclusions from the processing of other data (or with different content) to draw further conclusions;
- use of the raw data or the conclusions drawn through an analysis of the data (at different stages) or of the content created or improved to differentiate a certain product or service;
- sale of raw data;
- sale of conclusions drawn from the elaboration of data at different stages of data processing; and
- sale of content created or enhanced on the basis of data.

4. Location and Measurement of Value from Data

Having analysed the data processing value chain and the key actors in the data economy, the next step is to construct suitable tax rules to identify the place of relevant value creation and the rules to measure the value created. In fact, the central principle underpinning the ongoing overhaul of the international tax framework is that profit should be taxed where value is created.^[17] This principle is the driver of the proposals on the taxation of the digital economy currently under discussion in the European Union^[18] and internationally.^[19] Value creation can be defined as the “process of creating something which did not exist before, of which the outcome is better than the closest alternative available, for which individuals are willing to exchange a monetary amount”.^[20] Unclear rules on this matter risk ignoring and leaving untaxed important value or enable transfer pricing practices that allocate the value to the place where taxation is most favourable.^[21]

Furthermore, the need for data evaluation can arise, for example, in the context of mergers and acquisitions, where the entities involved must be accurately evaluated or in the context of bankruptcy, where the assets of the entity need to be assigned a specific value.^[22] In any event, being aware of the value of the enterprise’s assets is a prerequisite to making investment decisions, enhancing the quality of the asset and drawing maximum benefit therefrom.^[23]

The evaluation of data, however, is a tricky question due to certain special features that distinguish data from the assets of the enterprise. Such features may be deemed to coincide with the seven “laws” that have been identified in relation to information.^[24] These seven laws differentiate information from other assets in terms of the application of the laws of economics:

- information can be shared infinitely without losing its value;
- share and use has positive effects on the value of information;
- time can have a negative impact on the value of information and the extent of such impact depends on the type of information;
- the more accurate a piece of information is, the more value may be assigned to it;
- the combination of different pieces of information can add value;
- the amount of information is not necessarily relevant to its value – in fact, it can imply a decrease in value; and
- information is not exhaustible with use but is a self-generating resource that increases through use.

17. OECD, id.

18. European Commission DG TAXUD, *Fair Taxation of the Digital Economy* (2018), available at http://www.europarl.europa.eu/cmsdata/152963/Commission_powerpoint.pdf.

19. Inclusive Framework on BEPS, *supra* n. 6.

20. T. Theunis, *Profit Allocation Based on Value Creation in the Digital Economy*, HARN60 Master Thesis, Lund University (2017/2018).

21. Valente, *supra* n. 16.

22. J. Short & S. Todd, *What’s Your Data Worth?*, MIT Sloan Management Review (Spring 2017).

23. Reply Glue, *The valuation of data as an asset: a consumption-based approach*, available at https://www.reply.com/Documents/13903_img_The-valuation-of-data-as-an-asset.pdf.

24. D. Moody & P. Walsh, *Measuring the Value of Information: An Asset Valuation Approach*, Seventh European Conference on Information Systems (ECIS), Copenhagen Business School (1999).

The above factors imply that the known framework for the assessment of the value of assets cannot be applied, as such, to information, including data, but needs to be adjusted to take these differences into account.

In addition, as regards the location of value creation, it needs to be duly considered that data and information, in general, is an intangible asset.^[25] This means that it is not of a physical nature and does not have a location per se.^[26] Also, it does not have any value in and of itself due to its mere presence, which is the main difference in comparison to gold.

Owning data as an intangible asset does not imply profits and does not lead to returns. Something else must take place for the intangible to generate value and produce profit: it must be used.^[27] In this respect, it can be concluded that value creation does not stem from ownership of the intangible asset of data but the exploitation activity, i.e. its development, updating, maintenance, protection, expansion, etc. In other words, amongst the players, identified in section 3. above, involved in data processing and having a claim on any value created are those taking part in the exploitation activity. It follows that the discussion on relevant allocation of taxing power is restricted to the jurisdictions where these players are located.

User contribution to value creation in the context of data-centred business models must hence be considered in light of the above conclusions. Such a contribution is deemed to fall within the heart of digital business activities and the special features thereof. New technologies have enabled (mere) consumers to be upgraded as consumers/producers. Yet, if the consumer is part of the value production, he should be entitled to claim part of the value, which would subsequently justify taxing rights of the jurisdiction where he is located.^[28] In fact, there is currently a debate on the taxation of digital business centres that revolves around identifying the extent to which consumers/users actually contribute to the creation of value from data processing.

User contribution to value creation can be divided into two broad categories: passive and active contribution, which trigger a different assessment from a valuation – and subsequently from a tax – perspective. On the one hand, active users are deemed to be those who provide digital content (for example, users uploading videos on YouTube or information on Wikipedia) or actively network (for example, users concluding contracts online for the purchase of products/services or users commenting on/rating the products they have purchased on an online retail platform). On the other hand, passive users include those who release their personal data, for example, on the online platforms they use, hence permitting them to be profiled and the platform to be expanded, through the accumulation of increased amounts of data. This second type of user is the most common.

In respect of active users, the user consciously puts effort into and produces content that is made available to the platform and its other users; thus, the value of the platform is increased as a result of the effort of the user. In respect of passive users, the main contribution of the user is the communication to the platform of personal data; there is no effort and there is no new content. Such personal data does not have a value on its own as a result of its mere ownership but can gain (important) value if elaborated on in a profitable manner. It is therefore clear that there is a difference in the level of contribution in each of these scenarios, which implies that their evaluation and subsequent taxation cannot be the same.^[29]

Beyond the contribution of users, the same pattern can be applied in relation to other players involved in value creation from data processing. Their contributions must be distinguished and assessed on a case-by-case basis, taking into account the relevance of each contribution to the creation of the specific value. In this regard, it has been observed that recording, saving, collecting and the general grouping of raw data should not be considered to create significant value because this does not lead to new information. This is not the case in relation to other data processing activities, including targeted analysis, as well as combining and compiling statistics; such activities can lead to new content and actually create value.^[30]

5. Proposals for the Taxation of the Digital Economy

From a tax perspective, the special characteristics of the data-centred economy, and its growing share of worldwide revenue, have triggered a series of efforts to adjust the international tax framework to the data reality. The proposals for the taxation of the digital economy, including the data-centred business models that are currently under discussion, have, however, been criticized repeatedly for not reflecting the above findings. These proposals include mainly:

- the EU Digital Tax Package, which encompasses two directive proposals, i.e. regarding the short-term provision of a digital services tax (DST)^[31] and the long-term establishment of a digital permanent establishment (PE) concept;^[32] and

25. It has been held that information falls under the category of assets, since it: (i) has service potential or future economic benefit potential, (ii) is subject to control, and (iii) is a product of a transaction (three key elements of an asset). Moody & Walsh, *supra* n. 24.

26. In addition, intangibles can easily be transferred through mere contractual arrangements without the need for substantive action. This makes intangibles vulnerable to manipulation in the context of (aggressive) tax planning and hence they are not a reliable indicator of the place of value creation. See Valente, *supra* n. 16.

27. W. Haslehner, *Taxing Where Value is Created in a post-BEPS (digitalized) world?*, Kluwer International Tax Blog (30 May 2018).

28. To this effect, however, consumption taxes, including value added tax (VAT) should be duly taken into account.

29. T. Theunis, *supra* n. 20 and Haslehner, *supra* n. 27.

30. Y. Brauner & P. Pistone, *Some Comments on the Attribution of Profits to the Digital Permanent Establishment*, 72 Bull. Intl. Taxn. 4a/Special Issue (2018), Journals IBFD.

31. DST Proposal, *supra* n. 5.

32. European Commission, *Proposal for a Council Directive laying down rules relating to the corporate taxation of a significant digital presence*, COM(2018) 147, EU Law IBFD [hereinafter SDP Proposal].

- the OECD new nexus approach outlined in the context of the BEPS Final Report on Action 1.^[33]

More specifically, the European Commission has suggested that the PE concept be extended to a significant digital presence, regardless of physical presence. Factors indicating such a significant remote presence would include:

- the number of users of digital services provided in a specific jurisdiction;
- the number of business contracts for the supply of digital services with users of a certain jurisdiction; and
- the annual business revenue from the supply of digital services to users of a certain jurisdiction.^[34]

There is no distinction between active and passive users or in relation to the specific data processing activity performed. In addition, it seems to be highly debatable whether or not the existence of a user base, where the use of digital services does not involve a charge to the user, should be considered evidence of substantial activity in a given jurisdiction. In this respect, it is argued that such a user base should be distinguished from a customer base, in respect of which there is a “transfer of financial means” and hence a real exchange of value.^[35]

Similar remarks can be made in relation to the short-term solution promoted in the European Union, i.e. the application of a DST to specific business activities. These activities have allegedly been distinguished from others (falling outside the scope of the DST) on the basis that user contribution is at the core of relevant value creation. Based on this premise, DST would, in principle, be subject to additional conditions applicable to marketing, intermediation services and sales of user data. Once again, the type of user contribution does not seem to be relevant. Interestingly, the majority of the services identified do not refer to active user participation but to passive contribution through the release of the personal data of users.

At the international level, a relevant proposal has been made in the context of the BEPS Project.^[36] A new nexus approach is in the preliminary stages of discussion and would achieve better alignment between value creation and taxation. This new nexus would take into account user contributions in identifying economic substance even in the absence of physical presence. The indicative factors differ from those in the EU digital PE case. They are, namely: (i) revenue generated from a certain jurisdiction (regardless of the connection with digital services); (ii) digital indicators, such as the existence of a local domain name, a local website using local language and the availability of local payment options; (iii) user-related factors, including the number of active users, the number of contracts concluded online with users from a certain jurisdiction, and the volume of data collected from users residing in a certain jurisdiction. Under the OECD proposal, however, the lack of a specific distinction between the various types of user contributions may be considered to have a marginal impact since user-based factors simply fall under one of three categories of indicators of economic substance. In any event, this solution is not considered workable at this point. It requires further elaboration,^[37] which is expected to be concluded in 2020 with the release of a consent-based proposal by the more than 100 jurisdictions forming part of the Inclusive Framework.^[38]

6. Conclusion

To sum up, this note has focused on the ever-growing data-centred economy and has sought to shed some light on the proper method for the evaluation of data and data processing activities. Such evaluation is a prerequisite to the attribution of taxing power in relation to data processing and the determination of the correct method to allocate such value amongst the different jurisdictions involved. To this end, this note examined some of the more dominant business models deemed to exploit user contribution in order to reconstruct the value chain thereof and the key players involved. It went on to provide some remarks on the application of taxation-at-the-place-of-value-creation principle in respect of the data economy and the content of the proposals on the taxation of the digital economy currently under discussion.

Information, including data, constitutes an intangible asset. Most importantly, the value of information, in principle, increases with its distribution and use, while the opposite is true for material assets. While use and diffusion of data adds value, such value added must be considered ad hoc, taking into account the particular circumstances of each case. Hence, the contribution of users of digital services may lead to more or less value for the respective provider depending on the type of contribution. Equally, data processing activities must be distinguished and evaluated on a case-by-case basis, considering that certain activities tend to produce more value than others in the data economy context.

The European Commission has taken an important step forward in an effort to identify proper rules to tax value created over the web.^[39] The OECD is moving in the same direction, although it is following different steps, starting from the 2015 Final Report on BEPS Action

33. OECD/G20, *Addressing the Tax Challenges of the Digital Economy – Action 1: 2015 Final Report* (OECD 2015), International Organizations' Documentation IBFD [hereinafter *Action 1 Final Report* (2015)].

34. Art. 4 SDP Proposal.

35. W. Schoen, *International Tax Coordination for a Second-Best World (Part 1)*, 1 WTJ 4 (2009), Journals IBFD.

36. P. Valente, *Digital Revolution. Tax Revolution?*, 72 Bull. Intl. Taxn. 4a/Special Issue (2018), Journals IBFD.

37. Other potential solutions that could be considered according to the *Action 1 Final Report* (2015) include (i) a withholding tax on remote sales (where the seller is not located in the country of the purchaser and the sale is concluded online) and (ii) an equalization levy applicable to non-resident enterprises with significant economic presence. The equalization levy would take into account the factors mentioned in sec. 5. as indicators of a digital PE, hence also user-related factors. It would nevertheless function differently from the EU DST: while the former would seek to remedy any differences in the tax treatment of resident and non-resident providers, the latter would seek to remedy the fact that user contribution is not sufficiently taken into account in allocating taxing rights.

38. OECD, *Brief On The Tax Challenges Arising From Digitalisation: Interim Report 2018* (OECD 2018), available at <https://www.oecd.org/tax/beps/brief-on-the-tax-challenges-arising-from-digitalisation-interim-report-2018.pdf> (accessed 29 Mar. 2019).

39. R. Petrucci & V. Koukouloti, *The European Commission's Proposal on Corporate Taxation and Significant Digital Presence: A Preliminary Assessment*, 58 Eur. Taxn. 9 (2018), Journals IBFD.

1, continuing with the 2018 Interim Report and culminating in a commitment to release a consent-based final report on the matter by 2020.^[40] With regard to the solutions proposed up until this point, it is arguable whether or not they sufficiently take into account the particularities of data as an intangible asset.

The data-centred economy needs to be understood plainly and thoroughly and this is a prerequisite to building an appropriate international tax system. Its unique characteristics demand an adjustment to the existing tax rules, i.e. a targeted elaboration on the rules in order to suit the new concepts. The variety of business models out there and the ongoing development of new means of user interconnection and participation demand flexible rules and a case-by-case examination.

In this respect, there are two important lessons to be learned from international taxation's past history. First, issues that have a cross-border reach, such as the activities of multinationals or the sharing economy, cannot be efficiently dealt with in a local context. New technologies have resulted in a global marketplace that is at odds with the existing fragmented international framework. Any solutions need to be widely acceptable in order to be enforceable. Second, regulatory action to establish the coordinates for the new activities must be timely if fragmentation is to be prevented and to ensure that the rules keep pace with the economy. If these steps are not taken, the tax world risks being led back to the pre-BEPS situation. This second time around, there will be no excuse for failing to keep up with economic developments.

^{40.} OECD, *supra* n. 38.